United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Tennessee Agricultural Experiment Station

Soil Survey of Haywood County, Tennessee

How To Use This Soil Survey

General Soil Map

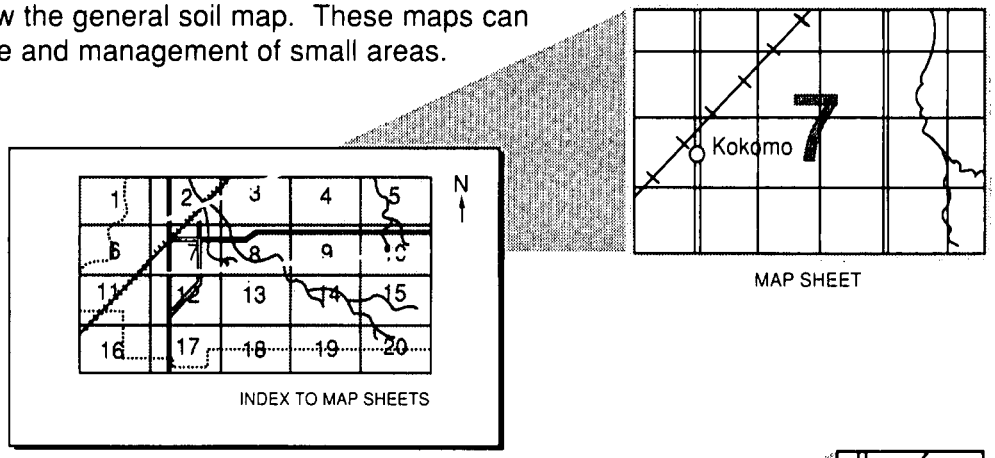
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

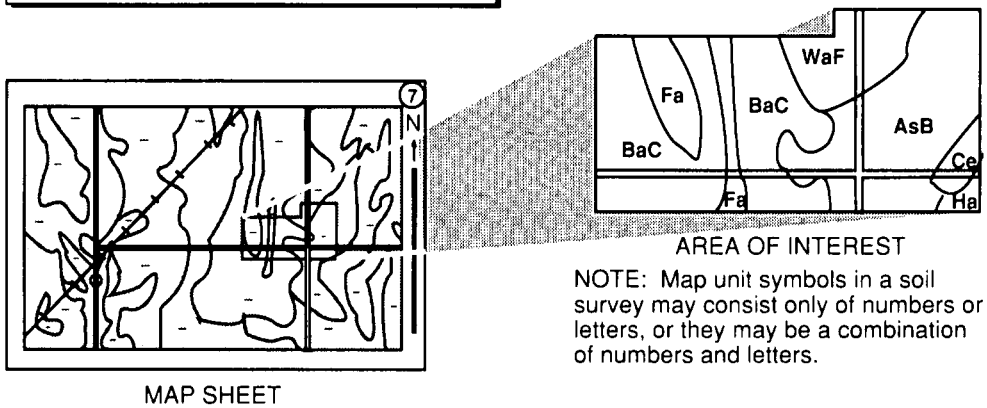
To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet, and turn to that sheet.



INDEX TO MAP SHEETS

MAP SHEET

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** (see Contents), which lists the map units by symbol and name and shows the page where each map unit is described.



MAP SHEET

AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1986. Soil names and descriptions were approved in 1989. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1986. This survey was made cooperatively by the Natural Resources Conservation Service and the Tennessee Agricultural Experiment Station. It is part of the technical assistance furnished to the Haywood County Soil Conservation District. Funds to accelerate the survey were provided by the Haywood County Board of Commissioners, the Tennessee Valley Authority, and the Tennessee Department of Agriculture.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

All programs and services of the Natural Resources Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: An area in Haywood County where crop residue management and winter cover crops help to control erosion on highly erodible soils that formed in loess.

Contents

Issued September 1995

Index to Map Units

Summary of Tables

Foreword

This soil survey contains information that can be used in land-planning programs in Haywood County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Jerry S. Lee
State Conservationist
Natural Resources Conservation Service

Soil Survey of Haywood County, Tennessee

By Carlie McCowen, David C. McMillen, and Willie L. Turner, Natural Resources Conservation Service, and Jeff D. Nanny, Robbie Seals, Richard L. Livingston, Robert G. Jordan, and Kirk McEachern, Haywood County

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Tennessee Agricultural Experiment Station

HAYWOOD COUNTY is in the southwestern part of Tennessee (fig. 1). It has an area of 341,800 acres, or about 534 square miles. It is bounded on the north by Crockett County, on the east by Madison County, on the south by Hardeman and Fayette Counties, and on the west by Tipton and Lauderdale Counties. In 1980, the population of Haywood County was 20,318. Brownsville, the county seat, is 58 miles northeast of Memphis and 24 miles west of Jackson.

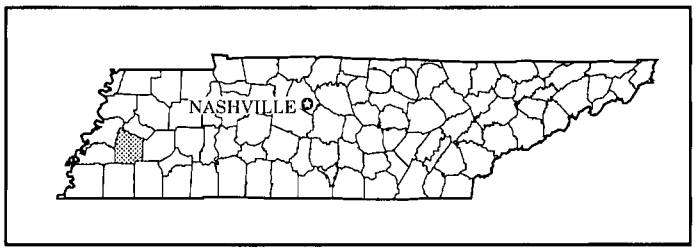


Figure 1.—Location of Haywood County in Tennessee.

General Nature of the County

This section provides general information about Haywood County. It describes settlement; natural resources; physiography, geology, relief, and drainage; industry and transportation facilities; and climate.

Settlement

Col. Richard Nixon was the first settler in Haywood County. In 1821, he established a settlement along a creek that now bears his name. In the next few years dozens of settlers moved into the county. The settlers came mainly from Virginia, North Carolina, and South Carolina. They were attracted by the abundance of rich farmland.

The county was named after Judge John Haywood. It was established on November 3, 1823, by an act of the General Assembly of the State of Tennessee. On November 23, 1823, the assembly authorized a county seat. In 1826, Brownsville was incorporated as the county seat. It was named after General Jacob Brown, who fought during the War of 1812. In 1850, Brownsville was the third largest town in west Tennessee. It had a population of 971. In 1824 and 1825, roads were built from Brownsville to the county line. They extended in direction of other county seats. The early settlers hunted, fished, cleared the land, and planted crops. The first cotton crop in the county was planted in 1828, and the first cotton gin was located in Brownsville. Cotton soon became the leading commodity, and cotton gins were built throughout the county. In 1880, the county produced 23,052 bales of cotton, 730,949 bushels of corn, 29,299 bushels of oats, 319 bushels of rye, and 29,278 bushels of wheat.

The first newspaper in the county was established in 1837. Other newspapers were established in 1867, in 1870, and in 1874. These three newspapers were consolidated in 1886 *(3, 4, 10)*.

Natural Resources

Haywood County has many valuable natural resources. The chief resources are the rivers, streams,

soils, forests, and animal life. The Hatchie and Forked Deer Rivers are the main waterways. The county has numerous other streams. It also has an abundant supply of good potable water. The water is supplied by wells dug into the deep sand aquifers throughout the county. Many of the soils in the county have a moderate or high level of fertility. Haywood County is one of the top farming counties in the State.

The county has only a relatively small acreage of forests. The forests are mainly along the Hatchie River. They consist of bottom-land hardwoods that are very valuable as a source of timber and provide valuable wildlife habitat. The county is in the Mississippi waterfowl flyway and has an abundance of ducks and geese that are of value to hunters and birdwatchers. The many rivers and lakes in the county are inhabited by many kinds of game fish.

Physiography, Geology, Relief, and Drainage

Haywood County is in the Southern Mississippi Valley Silty Uplands. The silty uplands include steep, dissected hills in the northwestern and southeastern parts of the county and low, rolling hills in the rest of the county. Broad, nearly level flood plains and terraces are along the Hatchie and Forked Deer Rivers. The highest elevation, 505 feet above sea level, is in an area where the Hatchie River flows out of the county.

The geology of the county consists of southern Coastal Plains sand, gravel, and clay overlain by loess, which varies in thickness. In the southeastern part of the county, the deposits of loess are thin or do not occur and the Claiborne and Wilcox Formations are exposed. These formations are irregular beds of sand locally interbedded with some lenses of gray to white clay. In most areas the rest of the county is covered with loess ranging from 4 to 20 feet in thickness.

The county is drained by the Hatchie and Forked Deer Rivers and their tributaries. The northern part of the county is drained by Nixon Creek, Jacocks Creek, and Mud Creek, which flow into the South Fork Forked Deer River. The southern part of the county is drained by Cypress Creek, Lagoon Creek, Muddy Creek, Poplar Creek, and Bear Creek, which flow into the Hatchie River.

Industry and Transportation Facilities

Farming is the chief industry in Haywood County. About 205,000 acres in the county is farmland. About 180,000 acres is used for row crops. The major farm commodities are soybeans, cotton, wheat, grain, sorghum, corn, beef cattle, and hogs.

The county has 10 industrial and manufacturing plants, which employ approximately 1,900 people. The plants manufacture heaters, air conditioners, lawnmowers, plastic and rubber products, heating elements, bearings, satellite dishes, and copper fittings.

The county is traversed by U.S. Highways 70 to 79, State Highways 76 and 19, and Interstate 40. It is served by one railroad, which transports grain and other products to and from local industries.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Brownsville in the period 1951 to 1981. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 41 degrees F and the average daily minimum temperature is 31 degrees. The lowest temperature on record, which occurred at Brownsville on January 24, 1963, is -10 degrees. In summer, the average temperature is 79 degrees and the average daily maximum temperature is 90 degrees. The highest recorded temperature, which occurred on August 16, 1954, is 106 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 51 inches. Of this, about 25 inches, or nearly 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 21 inches. The heaviest 1-day rainfall during the period of record was 6.7 inches at Brownsville on January 29, 1956. Thunderstorms occur on about 53 days each year. Severe local storms, including tornadoes, occasionally strike the survey area. They are of short duration and cause damage in scattered areas.

The average seasonal snowfall is about 6 inches. The greatest snow depth at any one time during the period of record was 11 inches. On the average, 4 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 70 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the south.

Average windspeed is highest, 11 miles per hour, in spring.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed

properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soil on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

1. Memphis-Loring

Nearly level to very hilly, well drained and moderately well drained, loamy soils that formed in thick deposits of loess; on dissected uplands and high, broad terraces

This map unit consists mainly of soils on highly dissected hills. The hillsides are cut by many drainageways, some of which extend all the way up to the hilltop. The less sloping hilltops are generally winding, narrow, and uniform in elevation. A small acreage of this unit is on broad terraces in the extreme northeast part of the county. Slopes range from 0 to 40 percent.

This map unit makes up about 2 percent of the county. It is about 60 percent Memphis soils and 20 percent Loring soils (fig. 2). Smithdale and Adler soils are of minor extent in the unit.

Memphis soils are on nearly level and gently rolling hilltops and on rolling to very hilly side slopes. They are very deep, well drained, loamy soils.

Loring soils are on undulating and gently rolling hilltops and on rolling and hilly side slopes. They are very deep, moderately well drained, loamy soils that have a fragipan in the subsoil.

About 60 percent of the acreage has been cleared of trees. Most of the cleared areas are used for soybeans, wheat, or cotton. A few areas are used as pasture. The uncleared acreage consists of the steeper areas, which support mixed hardwoods.

The nearly level and gently rolling soils, most of which have been cleared of trees, are suited to row crops and to pasture. The slope and the hazard of erosion are the main management concerns. The unit has few perennial streams, but most areas are well suited to the development of ponds that provide water for livestock.

The major soils are well suited to trees. The woodland in this map unit mainly supports yellow-poplar, cherrybark oak, white oak, and hickory. Productivity is high. Erosion is a hazard along logging roads and skid trails.

The major soils are suited to urban development. The slope and low strength are the main limitations in areas of the Memphis soils. The slope, low strength, and slow permeability are limitations in areas of the Loring soils. The soils on narrow hilltops are well suited to single-family dwellings if roads are nearby.

Because of the slope, the major soils are poorly suited to intensive recreational uses. They are suited to extensive recreational uses. They are mainly in areas of fields or woodland where the density of housing is low.

2. Loring-Memphis-Adler

Nearly level to rolling, moderately well drained and well drained, loamy soils that formed in thick deposits of loess and in alluvium; on dissected uplands and narrow flood plains

This map unit consists mainly of soils on dissected hills and on narrow flood plains. The hilltops are mostly winding and are narrow or fairly wide. The hillsides are mostly rolling. The drainageways and the flood plains along streams are nearly level. Slopes range from 0 to 12 percent.

This map unit makes up about 55 percent of the county. It is about 45 percent Loring soils, 23 percent Memphis soils, and 12 percent Adler soils (fig. 2).

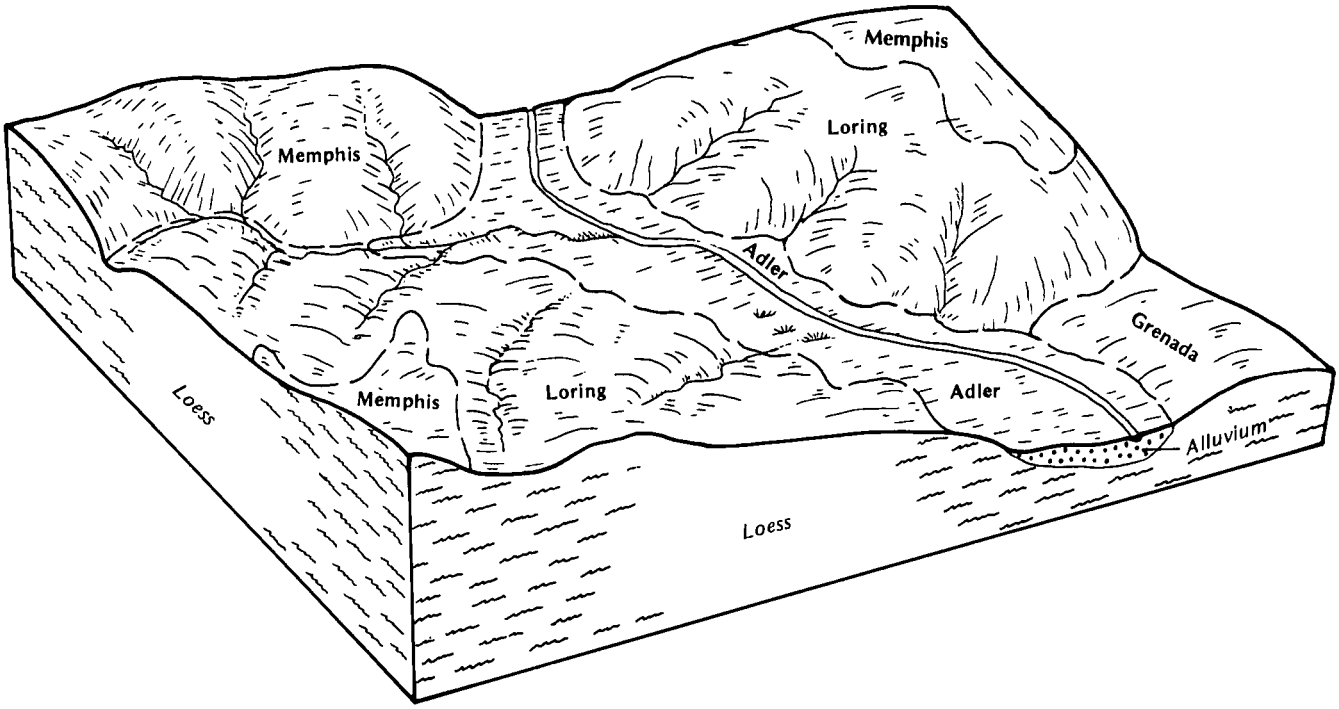


Figure 2.—Pattern of soils and parent material in the Memphis-Loring and Loring-Memphis-Adler general soil map units.

Grenada and Routon soils are of minor extent in the unit.

Loring soils are on undulating to rolling hilltops and hillsides. They are very deep, moderately well drained, loamy soils that have a fragipan in the subsoil.

Memphis soils are in undulating to rolling areas on the higher hilltops and hillsides. They are very deep, well drained, loamy soils.

Adler soils are on nearly level flood plains. They are very deep, moderately well drained, loamy soils.

Most of the acreage has been cleared of trees. The major soils are suited to row crops and are well suited to pasture. The hazard of erosion and the available water capacity of the soils that have a fragipan are the main management concerns.

The major soils are well suited to trees. The woodland in this map unit mainly supports cherrybark oak, sweetgum, white oak, and hickory. Productivity is high or moderately high. Erosion is a hazard along logging roads and skid trails.

The major soils generally are poorly suited to urban development. The soils that have a fragipan are poorly suited to septic tank absorption fields. Low strength and the slope limit community development. The soils on flood plains are not suited to urban uses.

The major soils are poorly suited to intensive recreational uses. The slope, wetness, and slow permeability are the main limitations. The soils are suited to extensive recreational uses. They commonly are in areas of woodland or fields where the density of housing is low.

3. Routon-Dubbs

Nearly level and gently sloping, poorly drained and well drained, loamy soils that formed in loess and alluvium; on low stream terraces

This map unit consists of soils on low ridges that rise about 4 to 8 feet above broad flats. It is on low terraces directly above the adjacent flood plains. Slopes range from 0 to 5 percent.

This map unit makes up about 7 percent of the county. It is about 80 percent Routon soils and 10 percent Dubbs soils (fig. 3). Adler, Center, Convent, and Rosebloom soils are of minor extent in the unit.

Routon soils are on low, wide flats between low, gently sloping hills. They are very deep, poorly drained, loamy soils.

Dubbs soils are on low, gently sloping hills. They are very deep, well drained, loamy soils.

Most of the acreage has been cleared of trees. The major soils are well suited to most row crops. Erosion is

a hazard in the gently sloping areas, and wetness is a problem in low areas.

The major soils are well suited to trees. The woodland in this map unit mainly supports cherrybarkoak, willow oak, pin oak, sweetgum, and willow. The use of equipment is limited to dry periods in summer and fall because of wetness in the Routon soils.

In most areas the major soils are poorly suited to urban development because of wetness. Areas that are suitable for single lot development are available. These areas are too small for extensive development.

Because of wetness, the major soils are poorly suited to intensive recreational uses. They are suited to extensive recreational uses, such as hunting and nature study.

4. Oaklimeter-Tichnor

Nearly level, moderately well drained and poorly drained soils that formed in alluvium; on wide flood plains along rivers

This map unit consists of soils on wide flood plains that have meandering sloughs and oxbows. Slopes range from 0 to 2 percent.

This map unit makes up about 9 percent of the county. It is about 50 percent Oaklimeter soils and 40 percent Tichnor soils (fig. 3). Adler, Convent, and Rosebloom soils are of minor extent in the unit.

Oaklimeter soils are on wide flats and slight rises.They are very deep, moderately well drained, loamy soils.

Tichnor soils are on wide flats and in slight depressions. They are very deep, poorly drained, loamy soils.

Most of the acreage is wooded, mainly with cherrybark oak, pin oak, willow oak, American sycamore, sweetgum, and baldcypress. The major soils are well suited to trees. The use of equipment is limited to dry periods in late summer and in fall.

The major soils are poorly suited to crops and pasture. Frequent flooding of long duration damages crops in some years. Some areas cannot be used for crops because they remain too wet during the growing season.

Because of flooding and wetness, the major soils are not suited to urban or intensive recreational uses. They are well suited to extensive recreational uses, such as hunting, hiking, and nature study. They provide valuable habitat for woodland and wetland wildlife. Careful management is needed to protect the habitat.

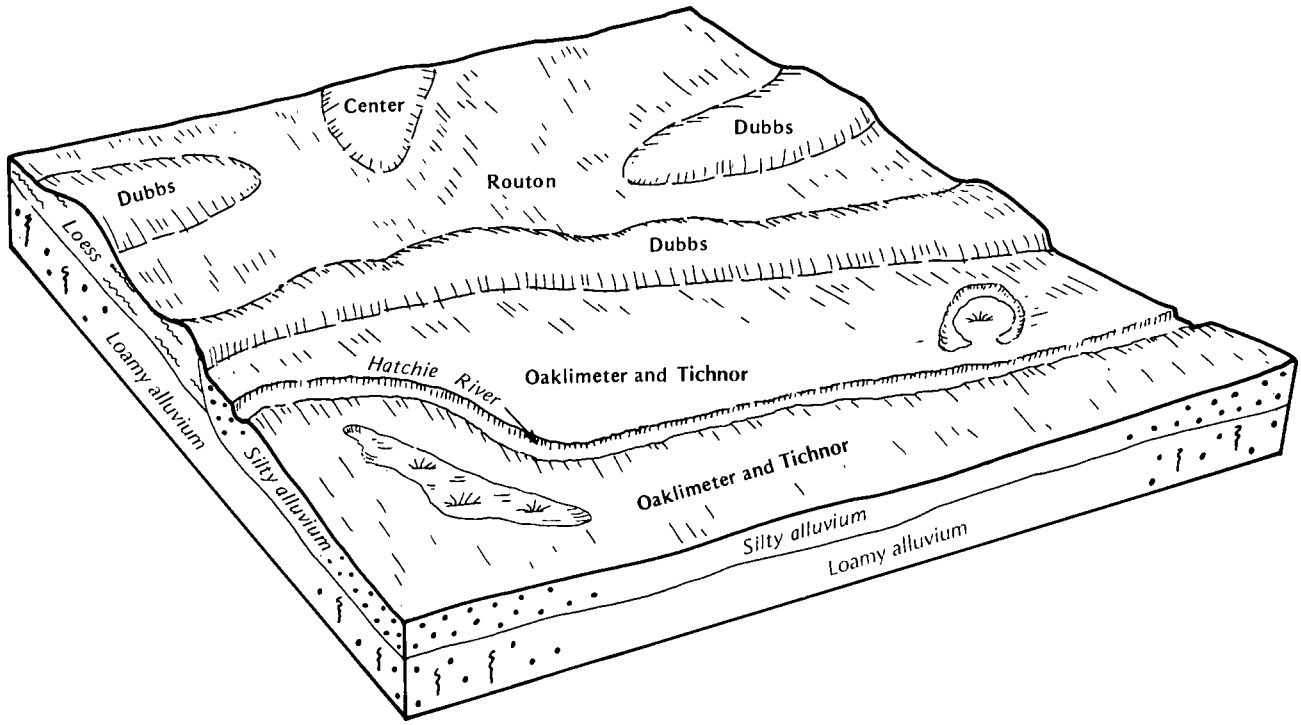


Figure 3.—Pattern of soils and parent material in the Routon-Dubbs and Oaklimeter-Tichnor general soil map units.

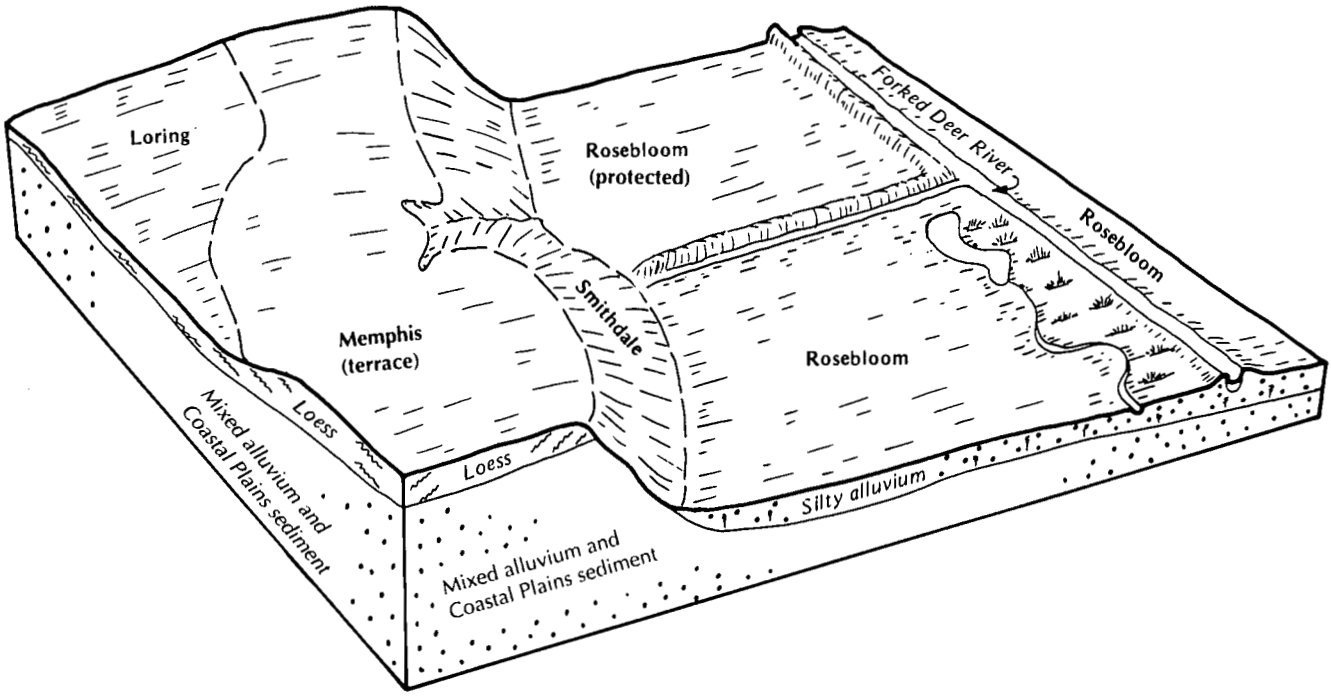


Figure 4.—Pattern of soils and parent material in the Rosebloom and Memphis-Loring general soil map units.

5. Convent-Adler

Nearly level, somewhat poorly drained and moderately well drained, loamy soils that formed in alluvium; on flood plains along streams

This map unit consists of soils on flood plains along streams that flow from the loess-covered uplands. The flood plains are narrow or medium in width. Slopes range from 0 to 2 percent.

This map unit makes up about 8 percent of the county. It is about 40 percent Convent soils and 35 percent Adler soils. Ochlockonee and Rosebloom soils are of minor extent in the unit.

Convent soils are on flats. They are very deep, somewhat poorly drained, loamy soils that are frequently flooded.

Adler soils are along streams. They are very deep, moderately well drained, loamy soils that are occasionally flooded.

Most areas of the Convent soils are used as woodland. These soils are poorly suited to row crops because of excessive wetness and flooding. The Adler soils have been cleared of trees and are used for soybeans, cotton, corn, or grain sorghum. They are well suited to row crops.

The major soils are well suited to trees. The woodland in this map unit mainly supports cherrybark oak, willow oak, water oak, sweetgum, and hickory. Productivity is high. The use of equipment is limited to dry periods in summer and fall.

Because of flooding and wetness, the major soils are not suited to urban or intensive recreational uses. They are suited to extensive recreational uses, such as hunting, hiking, and nature study.

6. Rosebloom

Nearly level, poorly drained, loamy soils that formed in alluvium; on flood plains along streams

This map unit is on wide flood plains along streams. Slopes range from 0 to 2 percent.

This map unit makes up about 9 percent of the county. It is about 80 percent Rosebloom and similar soils (fig. 4). Center, Convent, and Routon soils are of minor extent in the unit.

Rosebloom soils are on flats and in depressions. They are very deep, poorly drained, loamy soils. In most areas they are frequently flooded, and in some they are ponded for long periods in most years. A few areas are partially protected by levees and are only rarely flooded.

Most of the acreage is wooded, mainly with water oak, willow oak, sweetgum, baldcypress, green ash, water tupelo, and water hickory. The Rosebloom soils

are suited to trees. The use of equipment is limited to dry periods in summer and fall.

The Rosebloom soils are not suited to row crops or pasture. Frequent flooding of long duration damages crops in most years. Many areas cannot be used for crops because they remain too wet during the growing season.

Because of flooding, the Rosebloom soils are not suited to urban or intensive recreational uses. They are well suited to extensive recreational uses, such as hunting and nature study. They provide valuable habitat for woodland and wetland wildlife. Careful management is needed to protect the habitat.

7. Lexington-Smithdale

Undulating to very hilly, well drained, loamy soils that formed in loess and Coastal Plains sediments; on dissected uplands

This map unit consists of soils on highly dissected hills. The hills are cut by many drainageways that can reach all the way up to the hillcrest. The undulating hilltops are generally long and narrow and are uniform in elevation. Slopes range from 2 to 35 percent.

This map unit makes up about 3 percent of the county. It is about 50 percent Lexington soils and 30 percent Smithdale soils (fig. 5). Memphis, Ochlockonee,

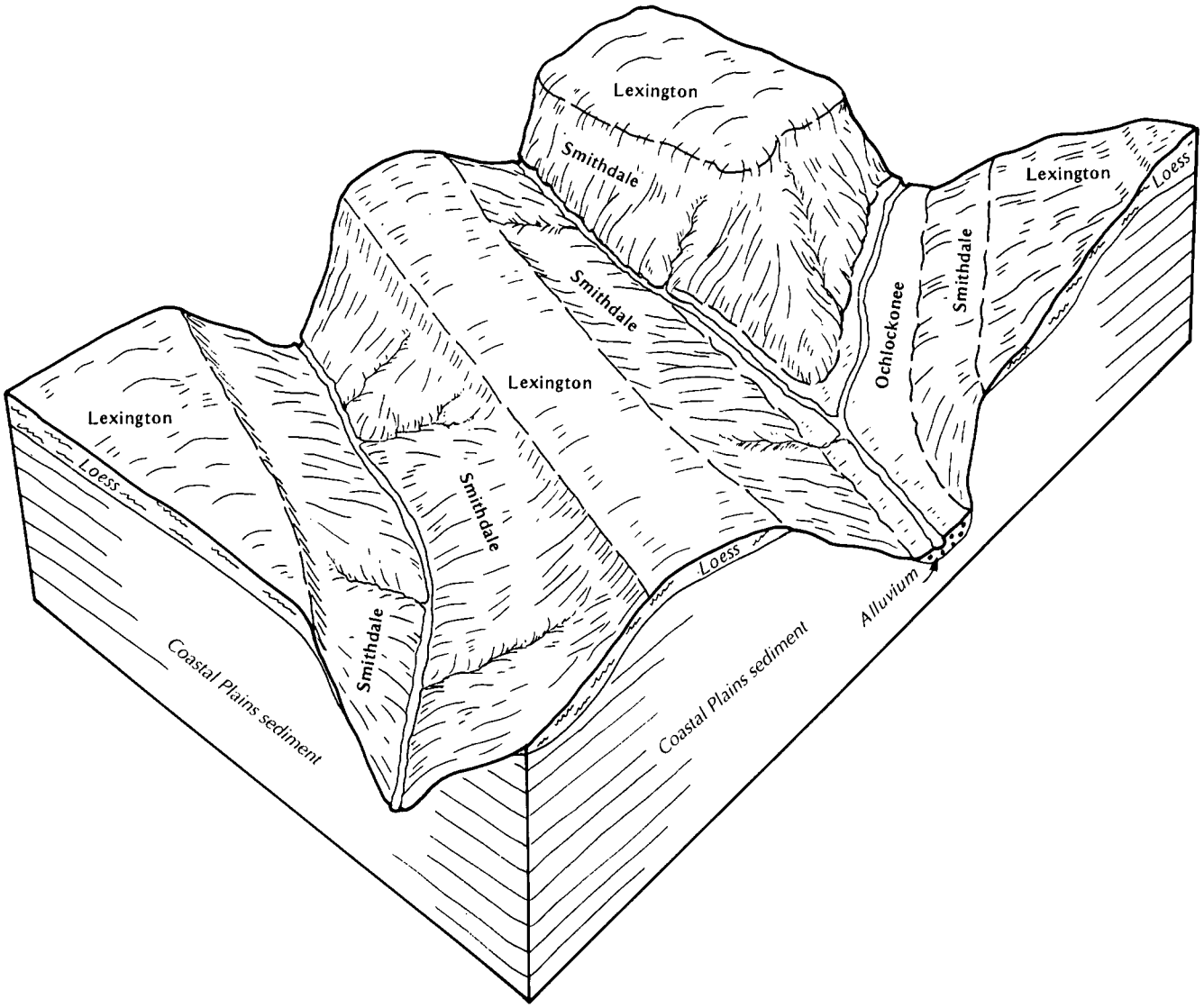


Figure 5.—Pattern of soils and parent material in the Lexington-Smithdale general soil map unit.

and Providence soils are of minor extent in the unit.

Lexington soils are on undulating to hilly hilltops and side slopes. They are well drained, very deep, loamy soils.

Smithdale soils are on rolling to very hilly side slopes. They are well drained, very deep, loamy soils.

Most of the acreage is wooded with cherrybark oak, black oak, white oak, hickory, dogwood, and eastern redcedar. The major soils are well suited to trees, but productivity is only moderate on the Smithdale soils. Erosion is a hazard along logging roads and skid trails. The undulating to rolling soils are suited to pasture and hay.

The major soils are poorly suited to most urban uses because of the slope. The soils on narrow hilltops are well suited to single-family dwellings if roads are nearby.

Because of the slope, the major soils are poorly suited to intensive recreational uses. They are well suited to extensive recreational uses. They are mainly in wooded areas where the density of housing is low.

8. Convent-Collins

Nearly level, somewhat poorly drained and moderately well drained, loamy soils that formed in alluvium; on flood plains along streams

This map unit consists of soils on flood plains along streams that flow from the loess-covered uplands. The flood plains are narrow or medium in width. Slopes range from 0 to 2 percent.

This map unit makes up about 4 percent of the county. It is about 40 percent Convent soils and 35 percent Collins soils. Ochlockonee and Rosebloom soils are of minor extent in the unit.

Convent soils are on flats. They are very deep, somewhat poorly drained, loamy soils that are frequently flooded.

Collins soils are along drainageways. They are very deep, moderately well drained, loamy soils that are frequently flooded.

Most areas of the Convent soils are used as woodland. These soils are poorly suited to row crops because of wetness and flooding. The Collins soils have been cleared of trees and are used for soybeans, cotton, corn, or grain sorghum. They are well suited to row crops.

The major soils are well suited to trees. The woodland in this map unit mainly supports cherrybark oak, willow oak, water oak, sweetgum, and hickory. Productivity is high. The use of equipment is limited to dry periods in summer and fall.

Because of flooding and wetness, the major soils are not suited to urban or intensive recreational uses. They are suited to extensive recreational uses, such as hunting, hiking, and nature study.

9. Routon

Nearly level, poorly drained soils that formed in loess; on low terraces

This map unit consists of soils on low, wide flats that have shallow depressions and have no well defined drainage pattern. Slopes range from 0 to 2 percent.

This map unit makes up about 3 percent of the county. It is about 85 percent Routon soils. Convent and Rosebloom soils are of minor extent in the unit.

Routon soils are on flats and in depressions. They are very deep, poorly drained, loamy soils. About 40 percent of the acreage of these soils is subject to ponding during winter and early spring.

Most of the acreage is wooded. The woodland mainly supports willow oak, cherrybark oak, sweetgum, and hickory in the higher areas and baldcypress, water tupelo, buttonbush, and wetland grasses in the ponded areas. The Routon soils are suited to trees. The use of conventional equipment is limited to dry periods.

The Routon soils are poorly suited to row crops and pasture because of wetness. Many areas cannot be used for crops because they remain too wet during the growing season.

Because of wetness, the Routon soils are not suited to most urban or intensive recreational uses. They are well suited to extensive recreational uses, such as hunting and nature study. They provide valuable habitat for woodland and wetland wildlife. Careful management is needed to protect the habitat.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under the heading "Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Memphis silt loam, 1 to 5 percent slopes, eroded, is a phase of the Memphis series.

Some map units are made up of two or more major soils. These map units are called soil complexes, soil associations, or undifferentiated groups.

A *soil complex* consists of two or more soils, or one or more soils and a miscellaneous area, in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Routon-Dubbs complex is an example.

A *soil association* is made up of two or more geographically associated soils that are shown as one unit on the maps. Because of present or anticipated soil uses in the survey area, it was not considered practical or necessary to map the soils separately. The pattern and relative proportion of the soils are somewhat similar. Lexington-Smithdale association, 8 to 12 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in the mapped areas are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Loring and Memphis soils, 5 to 12 percent slopes, gullied, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Gullied land is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The "Glossary" defines many of the terms used in describing the soils.

Ad—Adler silt loam, occasionally flooded. This soil is very deep, moderately well drained, and nearly level. It is on flood plains. Slopes are simple and linear and range from 0 to 2 percent. Individual areas are commonly long and narrow and range from about 5 to 50 acres in size.

Figure 6.—Cropland in an area of Adler silt loam, occasionally flooded. Convent silt loam, frequently flooded, is in the wooded area in the background.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; brown silt loam

Underlying material:
4 to 19 inches; dark yellowish brown silt loam that has grayish mottles
19 to 60 inches; mottled yellowish brown and light brownish gray silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Moderately acid or slightly acid
Hazard of erosion: None
Seasonal high water table: At a depth of 2 to 3 feet during winter and early spring
Flooding: Occasional, mostly during winter and early spring

Included with this soil in mapping are a few small areas of poorly drained and somewhat poorly drained soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Almost all of the acreage is used for row crops (fig. 6). This soil is well suited to soybeans, cotton, grain sorghum, and corn and to hay and pasture. It is rarely flooded during the growing season. Grazing during wet periods results in surface compaction and

poor tilth. Levees can be used to protect many areas from floodwater.

This soil is well suited to woodland. Eastern cottonwood, American sycamore, and black walnut can be planted for commercial production. The use of heavy equipment during wet periods results in compaction and the formation of ruts. Plant competition is a management concern, but undesirable plants can be controlled by herbicides or mechanical removal.

This soil is not suited to most urban uses because of the wetness and the flooding. If the soil is used as a site for local roads and streets, suitable fill is needed to raise the roadbed above the level of flooding. Culverts or bridges should be installed across creeks and drainageways. The soil is not suitable as a site for septic tank absorption fields because of the flooding and the wetness. A better suited soil should be selected.

The capability subclass is IIw.

Ca—Calloway silt loam. This soil is very deep, somewhat poorly drained, and nearly level. It is on toe slopes and upland flats of low relief. It has a fragipan in the subsoil. Slopes are simple and concave and range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam

Subsoil:
9 to 20 inches; yellowish brown silt loam that has brownish and grayish mottles
20 to 30 inches; light brownish gray silt loam
30 to 60 inches; a brittle fragipan of light brownish gray silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: High
Reaction: Generally moderately acid or strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: None
Seasonal high water table: At a depth of 1 to 2 feet during winter and early spring
Flooding: None

Included with this soil in mapping are small areas of soils that do not have a fragipan. Also included are a few areas of Grenada soils in the slightly higher landscape positions and a few areas of Routon soils in the slightly lower landscape positions. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is well suited to soybeans. It is poorly suited to cotton because of the wetness. It is suited to pasture plants that are somewhat tolerant of wetness. Grazing during wet periods results in surface compaction and poor tilth. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Eastern cottonwood, American sycamore, and cherrybark oak can be planted for commercial production. The use of heavy equipment during wet periods results in compaction and the formation of ruts. After the trees are harvested, careful management is needed to control competition from undesirable plants.

This soil is poorly suited to most urban uses because of the wetness. It is poorly suited to septic tank absorption fields because of the slow permeability and the high water table. A better suited soil should be selected. The soil is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIw.

Ce—Center silt loam. This soil is very deep and somewhat poorly drained. It is on nearly level stream terraces. Slopes are simple and slightly concave and range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; brown silt loam

Subsoil:
6 to 48 inches; yellowish brown and light yellowish brown silt loam that has grayish mottles
48 to 55 inches; light brownish gray silt loam that has brownish mottles

Substratum:
55 to 60 inches; yellowish brown silt loam that has yellowish, brownish, and grayish mottles

Important soil properties—

Permeability: Moderately slow
Available water capacity: High
Reaction: Strongly acid to slightly acid, commonly becoming less acid with increasing depth
Hazard of erosion: Slight
Seasonal high water table: 1.0 to 2.5 feet below the

Figure 7.—A row crop in an area of Center silt loam.

surface during winter and early spring
Flooding: None

Included with this soil in mapping are small areas of Routon soils on the lower parts of the landscape and small areas of Dubbs soils in the higher, more convex landscape positions. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops (fig. 7). This soil is well suited to soybeans and cotton and to pasture. Grazing during wet periods results in surface compaction and poor tilth. Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to woodland. Eastern cottonwood, American sycamore, and cherrybark oak can be planted for commercial production. The use of heavy equipment during wet periods results in compaction and the formation of ruts. Plant competition is a management concern, but undesirable plants can be controlled by herbicides or mechanical removal.

This soil is poorly suited to most urban uses because of the wetness. It is limited as a site for septic tank absorption fields because of the moderately slow permeability and the high water table. A better suited soil should be selected. The soil is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIw.

Co—Collins silt loam, occasionally flooded. This soil is very deep, moderately well drained, and nearly level. It is on flood plains along streams and in narrow drainageways. Slopes are simple and linear and range from 0 to 2 percent. Individual areas are commonly long and narrow and range from about 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Underlying material:
5 to 15 inches; brown silt loam
15 to 35 inches; brown silt loam that has grayish mottles
35 to 60 inches; mottled yellowish brown and light brownish gray silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: None
Seasonal high water table: At a depth of 2 to 3 feet during winter and early spring
Flooding: Occasional, mostly in winter and early spring

Included with this soil in mapping are a few areas of well drained soils. Also included are a few areas of soils that have strata of loam and sandy loam in the substratum. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. This soil is well suited to soybeans, cotton, and corn and to hay and pasture. High yields can be obtained. The soil is rarely flooded during the growing season. Grazing during wet periods causes surface compaction and poor tilth. Levees can be used to protect many areas from floodwater.

This soil is well suited to woodland. Eastern cottonwood, American sycamore, and black walnut can be planted for commercial production. The use of heavy equipment during wet periods results in compaction and the formation of ruts. Plant competition is a management concern, but undesirable plants can be controlled by herbicides or mechanical removal.

This soil is not suited to most urban uses because of the wetness and the flooding. If the soil is used as a site for local roads and streets, suitable fill material is needed to raise the roadbed above the level of flooding. Culverts or bridges should be installed across creeks and drainageways. The soil is not suitable as a site for septic tank absorption fields. A better suited soil should be selected.

The capability subclass is IIw.

Ct—Convent silt loam, rarely flooded. This soil is very deep, somewhat poorly drained, and nearly level. It is on flood plains along streams. It is partially protected from floodwater by levees. Slopes are simple and linear and range from 0 to 2 percent. Individual areas are commonly long and narrow and range from about 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; brown silt loam

Underlying material:
6 to 18 inches; brown silt loam that has brownish and grayish mottles
18 to 60 inches; light brownish gray silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Moderately acid or slightly acid
Hazard of erosion: None or slight
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter and early spring
Flooding: Rare; partial protection provided by levees

Included with this soil in mapping are small areas of moderately well drained or poorly drained soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

All of the acreage is used for row crops. This soil is well suited to most row crops and to pasture and hay. Grazing during wet periods results in surface compaction and poor tilth.

This soil is well suited to trees that are tolerant of wetness. Eastern cottonwood and American sycamore can be planted for commercial production. The use of heavy equipment during wet periods results in compaction and the formation of ruts. After the trees are harvested, careful management is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is very poorly suited to most urban uses because of the wetness. A better suited soil should be selected.

The capability subclass is IIw.

Cv—Convent silt loam, frequently flooded. This soil is very deep, somewhat poorly drained, and nearly level. It is on flood plains along streams. Slopes are simple and linear and range from 0 to 2 percent. Individual areas are commonly long and narrow and range from about 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; brown silt loam

Underlying material:
6 to 11 inches; brown silt loam that has brownish mottles

11 to 18 inches; brown silt loam that has brownish and grayish mottles
18 to 60 inches; light brownish gray silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Moderately acid or slightly acid
Hazard of erosion: None
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter and early spring
Flooding: Frequent, mostly during winter and spring

Included with this soil in mapping are small areas of moderately well drained or poorly drained soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used as woodland. A small acreage is used for row crops. This soil is poorly suited to most row crops. Spring planting is delayed in most years, and crops can be damaged by the wetness and the flooding.

This soil is well suited to hay and to summer pasture plants that are tolerant of wetness. Grazing during wet periods results in surface compaction and poor tilth. In most areas open ditches are needed to remove excess water. Levees can be used to protect many areas from floodwater.

This soil is suited to trees that are tolerant of wetness. Eastern cottonwood and American sycamore can be planted for commercial production. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Undesirable plants inhibit adequate natural or artificial reforestation unless intensive site preparation and maintenance measures are applied. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is not suited to most urban uses because of the wetness and the flooding. A better suited soil should be selected.

The capability subclass is IVw.

Db—Dubbs silt loam, 1 to 3 percent slopes, occasionally flooded. This soil is very deep and well drained. It is on low terraces along large streams. Slopes are simple and slightly convex. Individual areas are commonly long and narrow and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 8 inches; brown silt loam

Subsoil:
8 to 15 inches; yellowish brown silt loam
15 to 35 inches; yellowish brown silt loam that has brownish mottles
35 to 55 inches; yellowish brown loam that has grayish mottles
55 to 60 inches; yellowish brown sandy loam that has brownish and grayish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: None
Seasonal high water table: At depth of 4 to 6 feet, commonly in winter and early spring
Flooding: Occasional, mostly during late winter and early spring

Included with this soil in mapping are small areas of somewhat poorly drained soils. Also included are a few areas of soils that are sandy throughout. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used as woodland. The main trees are cherrybark oak, willow oak, hickory, sweetgum, and water oak. This soil is poorly suited to row crops because most areas are small and surrounded by wetter soils and are subject to flooding.

This soil is well suited to woodland. Loblolly pine, cherrybark oak, and black walnut can be planted for commercial production. No significant hazards or limitations affect woodland management.

This soil is not suited to most urban uses because of the flooding. A better suited soil should be selected.

The capability subclass is IIw.

DuB2—Dubbs silt loam, 1 to 5 percent slopes, eroded. This soil is very deep and well drained. It is on gently sloping stream terraces. Slopes are simple and slightly convex. Individual areas range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches; dark yellowish brown silt loam

Subsoil:
7 to 28 inches; brown silty clay loam
28 to 33 inches; brown silt loam
33 to 60 inches; dark yellowish brown silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; much of the original surface layer removed by past erosion
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are small areas of somewhat poorly drained soils and a few small areas of poorly drained soils in depressions. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Almost all of the acreage has been cleared and is planted to row crops. A few areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county and to pasture and hay. Erosion is a hazard if cultivated crops are grown. Measures that help to control erosion include crop residue management, minimum tillage, and cover crops, such as grasses and legumes. Broadcast planting of soybeans, instead of row planting, also helps to control erosion.

This soil is well suited to woodland. Black walnut, cherrybark oak, and loblolly pine can be planted for commercial production. No significant hazards or limitations affect woodland management.

This soil is suited to most urban uses. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material. The small size of the areas of this unit may affect urban uses. Also, most areas are adjacent to poorly drained soils on the lower parts of the landscape.

The capability subclass is IIe.

GrB2—Grenada silt loam, 1 to 5 percent slopes, eroded. This soil is very deep and moderately well drained. It is on undulating foot slopes and low hills. It has a fragipan in the subsoil. Slopes are complex and commonly concave. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; dark yellowish brown silt loam

Subsoil:
9 to 18 inches; yellowish brown silt loam
18 to 22 inches; grayish brown silt loam that has brownish mottles
22 to 60 inches; a brittle fragipan of yellowish brown and dark yellowish brown silt loam that has brownish and grayish mottles

Important soil properties—

Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; part of the original surface layer removed by past erosion
Seasonal high water table: At a depth of 1.5 to 2.5 feet during winter and early spring
Flooding: None

Included with this soil in mapping are small areas of somewhat poorly drained soils in depressions. Also included are a few areas of soils that do not have a well defined fragipan and some areas of severely eroded soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. Some areas are used as pasture. This soil is suited to cotton and soybeans, but yields are somewhat reduced because of a restricted rooting depth. Erosion is a hazard if cultivated crops are grown. The available water capacity has been reduced by past erosion. As soil material is removed by erosion, depth to the fragipan is reduced. As a result, the available water capacity also is reduced. Measures that help to control erosion in clean-cultivated areas include crop residue management and contour farming. Using the soil for pasture or hay also is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine, shortleaf pine, and cherrybark oak can be planted for commercial production. Trees are commonly subject to windthrow because the root zone is restricted by the fragipan. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is poorly suited to many urban uses because of the wetness. It is limited as a site for septic tank absorption fields because of the slow permeability and the wetness. A specially designed system should be installed or a better suited soil selected. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction

measures that provide adequate subgrade material.

The capability subclass is IIe.

GrB3—Grenada silt loam, 1 to 5 percent slopes, severely eroded. This soil is very deep and moderately well drained. It is on undulating foot slopes and low hills. It has a fragipan in the subsoil. Slopes are complex and commonly concave. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 13 inches; yellowish brown silt loam
13 to 17 inches; light brownish gray silt loam
17 to 60 inches; a brittle fragipan of yellowish brown silt loam

Important soil properties—

Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; most of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 1.5 to 2.5 feet during winter and early spring
Flooding: None

Included with this soil in mapping are small areas of somewhat poorly drained soils in depressions. Also included are a few areas of soils that do not have a well defined fragipan, some areas that are only moderately eroded, and small areas where erosion has removed all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. Some areas are used as pasture. This soil is suited to cotton, soybeans, and grain sorghum. Yields are lowered because of a restricted rooting depth. Erosion is a hazard if cultivated crops are grown. The available water capacity has been reduced by erosion. As soil material is removed by erosion, depth to the fragipan is reduced. As a result, the available water capacity also is reduced. Conservation measures, such as crop residue management, minimum tillage, cover crops, and contour farming, help to control erosion in clean-cultivated areas. Using the soil for pasture or hay also is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine, shortleaf pine, and cherrybark oak can be planted for commercial production. Because the root zone is restricted by the fragipan, trees are commonly subject to windthrow. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is poorly suited to many urban uses because of the wetness. It is limited as a site for septic tank absorption fields because of the slow permeability and the wetness. A specially designed system should be installed or a better suited soil selected. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIe.

LeB2—Lexington silt loam, 2 to 5 percent slopes, eroded. This soil is very deep and well drained. It is on undulating hilltops in the dissected uplands. Slopes are complex and convex. Individual areas range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; dark yellowish brown silt loam

Subsoil:
6 to 22 inches; brown silty clay loam
22 to 48 inches; brown silt loam
48 to 60 inches; red clay loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; much of the original surface layer removed by past erosion
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small areas of the moderately well drained Providence soils. These soils are in landscape positions similar to those of the Lexington soil. Also included are a few small areas of Smithdale soils on the steeper side slopes. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is well

suited to most of the row crops commonly grown in the county and to hay and pasture. Erosion is a hazard if cultivated crops are grown. Conservation measures, such as crop residue management, minimum tillage, and cover crops, help to control erosion. Broadcast planting of soybeans, instead of row planting, also helps to control erosion.

This soil is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine, black walnut, and cherrybark oak can be planted for commercial production. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is suited to most urban uses. It is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIe.

LeC2—Lexington silt loam, 5 to 8 percent slopes, eroded. This soil is very deep and well drained. It is on gently rolling hills in the dissected uplands. Slopes are complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; dark yellowish brown silt loam

Subsoil:
6 to 22 inches; brown silty clay loam
22 to 48 inches; yellowish brown silt loam
48 to 60 inches; yellowish brown loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; part of the original surface layer removed by past erosion
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small areas of the moderately well drained Providence soils in the lower landscape positions and some small, narrow areas of Ochlockonee soils along drainageways. Also included are small areas of severely eroded soils on the steeper parts of the hillsides. Included areas are generally less than 2 acres in size. They make up about 1 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is suited to most of the crops commonly grown in the county. It is well suited to pasture and hay. Erosion is a hazard if cultivated crops are grown. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to keep soil loss within acceptable limits. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is well suited to most urban uses, but low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIe.

LeC3—Lexington silt loam, 5 to 8 percent slopes, severely eroded. This soil is very deep and well drained. It is on gently rolling, narrow hilltops and hillsides in highly dissected areas. Slopes are complex and convex. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small

areas of the moderately well drained Providence soils in the lower landscape positions and some small, narrow areas of Ochlockonee soils along drainageways. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture. This soil is suited to most of the crops commonly grown in the county. It is well suited to pasture and hay. Erosion is a hazard if cultivated crops are grown. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to control erosion. Broadcast planting of soybeans, instead of row planting, helps to control erosion. Using the soil for pasture or hay also is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is well suited to most urban uses, but low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IVe.

LeD3—Lexington silt loam, 8 to 12 percent slopes, severely eroded. This soil is very deep and well drained. It is on rolling hills in the dissected uplands. Slopes are mainly complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small areas of the moderately well drained Providence soils in the slightly lower landscape positions and small areas of Ochlockonee soils along drainageways. Also included are small areas of Smithdale soils on the more dissected hillsides. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops or pasture. A few areas are used as woodland. This soil is not suited to row crops because of the hazard of erosion. It is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This soil is suited to most urban uses. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material. The slope is a limitation affecting some urban uses. This limitation can be overcome by a design that conforms urban projects to the natural slope of the land or by land shaping.

The capability subclass is VIe.

LgC3—Lexington-Providence complex, 5 to 8 percent slopes, severely eroded. These very deep, gently rolling soils are on hills in the dissected uplands. Slopes are complex and convex. The Lexington soil is well drained, and the Providence soil is moderately well drained. This map unit is about 55 percent Lexington soil and 35 percent Providence soil. The two soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping. Individual areas range from 5 to 20 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile

and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Providence soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 18 inches; brown silt loam
18 to 46 inches; a brittle fragipan of strong brown silt loam that has brownish and grayish mottles
46 to 60 inches; yellowish red sandy loam

Important properties of the Providence soil—

Permeability: Moderate above and below the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Reaction: Generally very strongly acid or strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter
Flooding: None

Included with these soils in mapping are small areas of the well drained Smithdale soils on the steeper hillsides and small areas of the well drained Memphis and moderately well drained Loring soils on the broader hilltops. Also included are a few small areas of the well drained Ochlockonee soils along drainageways and small areas where erosion has removed nearly all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This map unit is poorly suited to row crops because of the hazard of erosion. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to keep soil loss within acceptable limits.

This map unit is well suited to pasture and hay. Using the unit for pasture or hay can be effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This map unit is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This map unit is suited to many urban uses. The Providence soil is limited as a site for septic tank absorption fields because of the moderately slow permeability in the fragipan. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. The soils are limited as sites for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IVe.

LgD3—Lexington-Providence complex, 8 to 12 percent slopes, severely eroded. These very deep, rolling soils are on hillsides in the dissected uplands. Slopes are complex and convex. The Lexington soil is well drained, and the Providence soil is moderately well drained. This map unit is about 55 percent Lexington soil and 35 percent Providence soil. The two soils occur as areas so closely intermingled that they could not be separated at the scale selected for mapping. Individual areas range from 5 to 20 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Providence soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 18 inches; brown silt loam
18 to 46 inches; a brittle fragipan of strong brown silt loam that has brownish and grayish mottles
46 to 60 inches; yellowish red sandy loam

Important properties of the Providence soil—

Permeability: Moderate above and below the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter
Flooding: None

Included with these soils in mapping are small areas of the well drained Smithdale soils on the steeper parts of the landscape. Also included are small areas of the well drained Memphis and moderately well drained Loring soils on narrow hilltops and small areas where erosion has removed nearly all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops or pasture. This map unit is not suited to row crops. Erosion is a hazard, and a restricted rooting depth in the Providence soil reduces yields.

This map unit is suited to pasture and hay. Using the unit for pasture or hay is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This map unit is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants.

This map unit is suited to many urban uses. The Providence soil is limited as a site for septic tank absorption fields because of the moderately slow permeability in the fragipan. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. The soils are limited as sites for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is VIe.

LhD—Lexington-Smithdale association, 8 to 12 percent slopes. These very deep, rolling, well drained soils are on hills in the dissected uplands. The Lexington soil is on hilltops and the upper parts of hillsides, and the Smithdale soil is on the lower parts of hillsides. Slopes are complex and convex. The Lexington soil makes up about 50 percent of the map unit and the Smithdale soil 35 percent. Individual areas of each soil are large enough to be mapped separately. Because of present and predicted land uses, however, the two soils are mapped as one unit. Individual areas of the unit range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown silt loam

Subsurface layer:
2 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 44 inches; brown silt loam
44 to 55 inches; yellowish red loam
55 to 60 inches; red sandy clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Smithdale soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown fine sandy loam

Subsurface layer:
2 to 10 inches; yellowish brown fine sandy loam

Subsoil:
10 to 34 inches; yellowish red and red sandy clay loam
34 to 60 inches; red sandy loam

Important properties of the Smithdale soil—

Permeability: Moderate
Available water capacity: Moderate
Reaction: Generally very strongly acid or strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Included with these soils in mapping are small areas of the well drained Memphis and moderately well drained Loring and Providence soils on hilltops. Also included are small areas of the well drained Ochlockonee soils along narrow drainageways. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. A few small areas are used as pasture or hayland. This map unit is poorly suited to row crops because of the hazard of erosion. Crop yields are low.

This map unit is suited to pasture and hay. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This map unit is suited to woodland. Longleaf pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. Competition from undesirable plants is a management concern.

This map unit is suited to some urban uses. Urban projects should be designed so that they conform to the natural slope of the land. The Lexington soil is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction methods that provide adequate subgrade material.

The capability subclass is IVe.

LhE—Lexington-Smithdale association, 12 to 25 percent slopes. These very deep, hilly, well drained soils are on dissected uplands. Slopes are complex and convex. The Lexington soil makes up about 50 percent of the map unit and the Smithdale soil 35 percent. Individual areas of each soil are large enough to be mapped separately. Because of present and predicted land uses, however, the two soils are mapped as one unit. Individual areas of the unit range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown silt loam

Subsurface layer:
2 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 44 inches; brown silt loam
44 to 55 inches; yellowish red loam
55 to 60 inches; red sandy clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Smithdale soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown fine sandy loam

Subsurface layer:
2 to 10 inches; yellowish brown fine sandy loam

Subsoil:
10 to 34 inches; yellowish red and red sandy clay loam
34 to 60 inches; red sandy loam

Important properties of the Smithdale soil—

Permeability: Moderate
Available water capacity: Moderate
Reaction: Generally strongly acid or very strongly acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Included with these soils in mapping are small areas of the well drained Memphis and moderately well drained Loring and Providence soils on hilltops. Also included are small areas of the well drained Ochlockonee soils along narrow drainageways. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. A few small areas are used as pasture. This map unit is not suited to row crops because of the severe hazard of erosion. It is poorly suited to pasture and hay because the Smithdale soil is somewhat droughty and maintaining a cover of pasture grasses is difficult. Proper stocking rates and pasture rotation help to keep the pasture in satisfactory condition.

This map unit is suited to trees. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. Operating equipment on the highly dissected, hilly slopes is hazardous. Competition from undesirable plants is a management concern.

This map unit is poorly suited to most urban uses because of the dissected, hilly slopes. Urban projects should be constructed on the contour as much as possible.

The capability subclass is VIe.

LkD—Lexington-Smithdale-Gullied land complex, 5 to 12 percent slopes. This map unit consists of very

deep, gently rolling and rolling, well drained Lexington and Smithdale soils intermingled with Gullied land. The unit is on dissected uplands. Slopes are complex and convex. The unit is about 40 percent Lexington soil, 30 percent Smithdale soil, and 20 percent actively eroding gullies. The Lexington and Smithdale soils and the Gullied land occur as areas so closely intermingled that they could not be separated at the scale selected for mapping. Individual areas of the unit range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Strongly acid or very strongly acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Smithdale soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown fine sandy loam

Subsurface layer:
2 to 10 inches; yellowish brown fine sandy loam

Subsoil:
10 to 34 inches; yellowish red and red sandy clay loam
34 to 60 inches; red sandy loam

Important properties of the Smithdale soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: Moderate
Reaction: Very strongly acid or strongly acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Most areas of this map unit are dissected by gullies that are 1 to 15 feet deep and 20 to 200 feet long. Most of the streams that run through the unit have actively eroding vertical walls that are 3 to 10 feet high.

Included in this unit in mapping are small areas of Providence, Memphis, and Loring soils. Also included are small areas where the soils are eroded to the sandy substratum and small areas of sandy soils in narrow drainageways. Included areas are commonly less than 3 acres in size. They make up 10 to 20 percent of the map unit.

Most areas of this map unit have been abandoned and support weeds, brush, or trees. The unit is not suited to row crops or pasture and is poorly suited to most urban uses. Extensive reclamation is needed because of the deep gullies.

This map unit is poorly suited to woodland. Maintaining a cover of trees or planting loblolly pine or shortleaf pine helps to prevent further erosion. Operating heavy equipment around the gullies is hazardous.

The capability subclass is VIIe.

LkE—Lexington-Smithdale-Gullied land complex, 12 to 30 percent slopes. This map unit consists of very deep, hilly, well drained Lexington and Smithdale soils intermingled with Gullied land. The unit is on dissected uplands. Slopes are complex and convex. The unit is about 40 percent Lexington soil, 30 percent Smithdale soil, and 20 percent actively eroding gullies. The Lexington and Smithdale soils and the Gullied land occur as areas so closely intermingled that they could not be separated at the scale selected for mapping. Individual areas of the unit range from 10 to 100 acres in size.

The typical sequence, depth, and composition of the layers in the Lexington soil are as follows—

Surface layer:
0 to 5 inches; yellowish brown silt loam

Subsoil:
5 to 36 inches; brown silty clay loam
36 to 50 inches; yellowish brown silt loam
50 to 60 inches; red clay loam

Important properties of the Lexington soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: High
Reaction: Strongly acid or very strongly acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

The typical sequence, depth, and composition of the layers in the Smithdale soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown fine sandy loam

Subsurface layer:
2 to 10 inches; yellowish brown fine sandy loam
Subsoil:
10 to 34 inches; yellowish red and red sandy clay loam
34 to 60 inches; red sandy loam

Important properties of the Smithdale soil—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: Moderate
Reaction: Very strongly acid or strongly acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Most areas of this map unit is dissected by gullies that are 1 to 15 feet deep and 20 to 200 feet long. Most of the streams that run through the unit have actively eroding vertical walls that are 3 to 10 feet high.

Included in this unit in mapping are small areas of Providence, Memphis, and Loring soils. Also included are small areas where the soils are eroded to the sandy substratum and small areas of sandy soils in narrow drainageways. Included areas are commonly less than 3 acres in size. They make up 10 to 20 percent of the map unit.

Most areas of this map unit have been abandoned and support weeds, brush, or trees. The unit is not suited to row crops or pasture and is poorly suited to most urban uses. Extensive reclamation is needed because of the deep gullies.

This map unit is poorly suited to woodland. Maintaining a cover of trees or planting loblolly pine or shortleaf pine helps to prevent further erosion. Operating heavy equipment around the gullies is hazardous.

The capability subclass is VIIe.

LoB2—Loring silt loam, 1 to 5 percent slopes, eroded. This soil is very deep and moderately well drained. It is on undulating hills in the uplands. It has a fragipan in the subsoil. Slopes are complex and convex. Individual areas are irregular in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; dark yellowish brown silt loam
Subsoil:
6 to 26 inches; brown silt loam
26 to 57 inches; a brittle fragipan of brown and dark yellowish brown silt loam that has brownish and grayish mottles
57 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; part of the original surface layer removed by past erosion
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

Included with this soil in mapping are small areas of severely eroded soils on the more sloping parts of the landscape and small areas of the well drained Memphis soils in the slightly higher landscape positions. Also included are a few areas of soils that are similar to Loring soil but do not have a fragipan. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Nearly all of the acreage is used for row crops. A few small areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county. Erosion is a hazard if cultivated crops are grown. Measures that help to control erosion include contour farming, crop residue management, and minimum tillage. Broadcast planting of soybeans, instead of row planting, also helps to control erosion.

This soil is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Black walnut, cherrybark oak, and loblolly pine can be planted for commercial production. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to many urban uses. The slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIe.

LoB3—Loring silt loam, 1 to 5 percent slopes, severely eroded. This soil is very deep and moderately well drained. It is on undulating hills in the uplands. It

has a fragipan in the subsoil. Slopes are complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 14 inches; dark yellowish brown silt loam
14 to 44 inches; a brittle fragipan of dark yellowish brown and brown silt loam that has brownish and grayish mottles
44 to 60 inches; dark yellowish brown silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

Included with this soil in mapping are small areas of the well drained Memphis soils in the slightly higher landscape positions. Also included are small areas of soils that are similar to the Loring soil but do not have a fragipan and small areas where erosion has removed practically all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few small areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county, but further erosion is a serious hazard. Measures that help to control erosion include crop residue management, contour farming, and minimum tillage. Broadcast planting of soybeans, instead of row planting, also helps to control erosion.

This soil is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Black walnut, cherrybark oak, and loblolly pine can be planted for commercial production. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to most urban uses. The slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIe.

LoC3—Loring silt loam, 5 to 8 percent slopes, severely eroded. This soil is very deep and moderately well drained. It is on gently rolling hills in the uplands. It has a fragipan in the subsoil. Slopes are complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 14 inches; dark yellowish brown silt loam
14 to 44 inches; a brittle fragipan of dark yellowish brown and brown silt loam that has brownish and grayish mottles
44 to 60 inches; dark yellowish brown silt loam that has brownish mottles

Important soil properties—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

Included with this soil in mapping are small areas of the well drained Memphis soils in the slightly higher landscape positions. Also included are small areas of soils that are similar to the Loring soil but do not have a fragipan and small areas where erosion has removed all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few

areas are used as pasture or woodland. This soil is poorly suited to row crops because of the hazard of erosion. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to keep soil loss within acceptable limits.

This soil is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to most urban uses. The slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IVe.

LoD3—Loring silt loam, 8 to 12 percent slopes, severely eroded. This soil is very deep and moderately well drained. It is on rolling hillsides in the uplands. It has a fragipan in the subsoil. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 14 inches; dark yellowish brown silt loam
14 to 44 inches; a brittle fragipan of dark yellowish brown and brown silt loam that has brownish and grayish mottles
44 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

Included with this soil in mapping are small areas of the well drained Memphis soils. Also included are small areas of soils that are similar to the Loring soil but do not have a fragipan and small areas where erosion has removed practically all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as woodland or support brush and weeds. This soil is not suited to cultivated crops because of the hazard of erosion. It is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to most urban uses. The slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is VIe.

LPD—Loring and Memphis soils, 5 to 12 percent slopes, gullied. These very deep, gently rolling and rolling soils are in areas that are dissected by large gullies. Slopes are complex and convex. The Loring soil is moderately well drained, and the Memphis soil is well drained. This map unit is about 40 percent Loring soil, 35 percent Memphis soil, and 5 to 10 percent gullies. Some areas are made up of the Loring soil, some are made up of the Memphis soil, but most are made up of both soils. Individual areas of each soil are large enough to be mapped separately. Because of similar use and management, however, the two soils are mapped as one unit. Individual areas of the unit range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the

layers in the Loring soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 14 inches; dark yellowish brown silt loam
14 to 44 inches; a brittle fragipan of dark yellowish brown and brown silt loam that has brownish and grayish mottles
44 to 60 inches; dark yellowish brown silt loam

Important properties of the Loring soil—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

The typical sequence, depth, and composition of the layers in the Memphis soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 35 inches; brown and dark yellowish brown silt loam

Substratum:
35 to 60 inches; dark yellowish brown silt loam

Important properties of the Memphis soil—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Large gullies are in scattered areas throughout this map unit. Most are 5 to 10 feet deep, 5 to 20 feet wide, and more than 50 feet long.

Included with these soils in mapping are small areas of the well drained Smithdale soils on the steeper parts of hills and near gullies. Also included are small areas where slopes are more than 12 percent. Included areas are generally less than 3 acres in size. They make up about 15 percent of the map unit.

Most of the acreage is used as woodland. A few areas are idle and support weeds and brush. This map unit is not suited to row crops because of the deep gullies. In areas that do not support woody vegetation, a permanent cover of suitable vegetation, such as sericea lespedeza and loblolly pine, is needed.

This map unit is suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the plant cover helps to control erosion. Operating wheeled equipment around the gullies is hazardous.

This map unit is poorly suited to most urban uses because of the deep gullies. A better suited soil should be selected.

The capability subclass is VIIe.

LPE—Loring and Memphis soils, 12 to 30 percent slopes, gullied. These very deep, hilly soils are in areas that are dissected by large gullies. Slopes are complex and convex. The Loring soil is moderately well drained, and the Memphis soil is well drained. This map unit is about 40 percent Loring soil, 35 percent Memphis soil, and 5 to 10 percent gullies. Some areas are made up of the Loring soil, some are made up of the Memphis soil, but most are made up of both soils. Individual areas of each soil are large enough to be mapped separately. Because of similar use and management, however, the two soils are mapped as one unit. Individual areas of the unit range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers in the Loring soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 14 inches; dark yellowish brown silt loam
14 to 44 inches; a brittle fragipan of dark yellowish brown and brown silt loam that has brownish and grayish mottles
44 to 60 inches; dark yellowish brown silt loam

Important properties of the Loring soil—

Permeability: Moderate above and below the fragipan and slow in the fragipan
Available water capacity: Moderate
Reaction: Generally strongly acid or moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: At a depth of 2 to 3 feet during winter
Flooding: None

The typical sequence, depth, and composition of the layers in the Memphis soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 35 inches; brown and dark yellowish brown silt loam

Substratum:
35 to 60 inches; dark yellowish brown silt loam

Important properties of the Memphis soil—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Large gullies are in scattered areas throughout this map unit. Most are 5 to 10 feet deep, 5 to 20 feet wide, and more than 50 feet long.

Included with these soils in mapping are small areas of the well drained Smithdale soils on the steeper parts of hills and near gullies. Also included are small areas where slopes are more than 30 percent. Included areas are generally less than 3 acres in size. They make up about 15 percent of the map unit.

Most of the acreage is used as woodland. A few areas support weeds and brush. This map unit is not suited to row crops because of the hazard of erosion. In areas that do not support woody vegetation, a permanent cover of suitable vegetation, such as sericea lespedeza and loblolly pine, is needed.

This map unit is poorly suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Maintaining the plant cover minimizes erosion. Operating wheeled equipment around the gullies is hazardous.

This map unit is poorly suited to most urban uses because of the slope and the deep gullies. A better suited soil should be selected.

The capability subclass is VIIe.

MaA—Memphis silt loam, terrace, 0 to 2 percent slopes. This soil is very deep and well drained. It is on nearly level, broad terraces. Slopes are simple and linear. Individual areas are irregular in shape and are as much as 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; dark yellowish brown silt loam

Subsoil:
9 to 20 inches; brown silt loam
20 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Slight
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are small areas of the moderately well drained Loring soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county. The hazard of erosion is slight if cultivated crops are grown.

This soil is well suited to pasture and hay. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine, black walnut, and cherrybark oak can be planted for commercial production. No significant hazards or limitations affect woodland management.

This soil is well suited to most urban uses, but it is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability class is I.

MeB2—Memphis silt loam, 1 to 5 percent slopes, eroded. This soil is very deep and well drained. It is commonly on narrow, undulating hilltops in areas on dissected uplands where slopes are complex and convex. It also is on broad, gently sloping hilltops in areas of little dissected uplands where slopes are simple and linear. Individual areas are irregular in shape and range from 5 to 200 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; dark yellowish brown silt loam

Subsoil:
6 to 25 inches; brown silty clay loam
25 to 41 inches; brown silt loam
41 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; part of the original surface layer removed by past erosion

Seasonal high water table: None
Flooding: None

Included with this soil in mapping are small areas of soils that have slopes of more than 5 percent and are severely eroded. Also included are small areas of the moderately well drained Loring soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county. Erosion is a hazard if cultivated crops are grown. Measures that help to control erosion include contour farming and crop residue management. Broadcast planting of soybeans, instead of row planting, also helps to control erosion.

This soil is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine, black walnut, and cherrybark oak can be planted for commercial production. No significant hazards or limitations affect woodland management.

This soil is well suited to most urban uses, but it is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIe.

MeC3—Memphis silt loam, 5 to 8 percent slopes, severely eroded. This soil is very deep and well drained. It is on gently rolling hills in the dissected uplands. Slopes are mainly complex and convex. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 35 inches; brown and dark yellowish brown silt loam

Substratum:
35 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small areas of the moderately well drained Loring soils. Also included are areas that have a few small gullies. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is suited to most of the crops commonly grown in the county. Further erosion is a hazard if cultivated crops are grown. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to control erosion. Broadcast planting of soybeans, instead of row planting, can minimize soil loss.

This soil is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion.

This soil is well suited to many urban uses, but it is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IVe.

MeD3—Memphis silt loam, 8 to 12 percent slopes, severely eroded. This soil is very deep and well drained. It is on rolling hillsides in the dissected uplands. Slopes are commonly complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 35 inches; brown and dark yellowish brown silt loam

Substratum:
35 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate

Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few small areas of the moderately well drained Loring soils. Also included are some areas that have a few gullies. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. The rest is used as pasture or woodland. This soil is not suited to row crops because of the hazard of erosion. It is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion.

This soil is suited to most urban uses, but it is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material. The slope is a limitation affecting some urban uses. This limitation can be overcome by building on the contour or by land shaping.

The capability subclass is VIe.

MeE3—Memphis silt loam, 12 to 20 percent slopes, severely eroded. This soil is very deep and well drained. It is on dissected, hilly uplands. Slopes are mainly complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 35 inches; brown and dark yellowish brown silt loam

Substratum:
35 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few areas of the well drained Smithdale and Lexington soils. Also included are areas that have a few shallow gullies. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops or pasture. A few areas are used as woodland. This soil is not suited to cultivated crops because of the hazard of erosion. It is poorly suited to pasture. It is too steep for adequate maintenance of pasture grasses.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest floor helps to control erosion. Operating wheeled equipment on the steep hillsides is hazardous.

This soil is poorly suited to most urban uses because of the slope. Urban projects should be designed so that they conform to the natural slope of the land as much as possible.

The capability subclass is VIe.

MeF—Memphis silt loam, 20 to 40 percent slopes. This soil is very deep and well drained. It is in very hilly uplands. Slopes are mainly complex and convex. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown silt loam

Subsurface layer:
2 to 14 inches; yellowish brown silt loam

Subsoil:
14 to 35 inches; brown silty clay loam
35 to 46 inches; brown silt loam
46 to 60 inches; dark yellowish brown silt loam

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid to moderately acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are a few areas of Smithdale and Lexington soils on the lower parts of the hillsides. Also included are areas that have a few

gullies. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. This soil is not suited to cultivated crops and is poorly suited to pasture because of the hazard of erosion. It is too steep for adequate maintenance of pasture plants.

This soil is suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. Operating wheeled equipment on the dissected slopes is hazardous.

This soil is poorly suited to urban uses because of the steep, unstable slopes. A better suited soil should be selected.

The capability subclass is VIIe.

OA—Oaklimeter and Tichnor soils, frequently flooded. These very deep, nearly level soils are on flood plains. The Oaklimeter soil is moderately well drained, and the Tichnor soil is poorly drained. Slopes are simple and linear and range from 0 to 2 percent. This map unit is about 45 percent Oaklimeter soil and 35 percent Tichnor soil. Most areas are made up of both soils, but a few are made up of only one of the soils. Individual areas of each soil are large enough to be mapped separately. Because of present and predicted land uses, however, the two soils are mapped as one unit.

The typical sequence, depth, and composition of the layers in the Oaklimeter soil are as follows—

Surface layer:
0 to 7 inches; brown silt loam

Subsoil:
7 to 20 inches; brown silt loam that has grayish and brownish mottles
20 to 30 inches; yellowish brown silt loam that has grayish mottles
30 to 46 inches; light gray silt loam that has brownish mottles
46 to 60 inches; light gray silty clay loam that has brownish mottles

Important properties of the Oaklimeter soil—

Permeability: Moderate
Available water capacity: High
Reaction: Strongly acid or very strongly acid
Hazard of erosion: None
Seasonal high water table: 1.5 to 2.5 feet below the surface during winter and early spring
Flooding: Frequent; 1 to 8 feet deep during winter and early spring

The typical sequence, depth, and composition of the layers in the Tichnor soil are as follows—

Surface layer:
0 to 11 inches; dark yellowish brown silt loam that has brownish mottles

Subsurface layer:
11 to 36 inches; light gray silt loam that has brownish mottles

Subsoil:
36 to 60 inches; light brownish gray silty clay loam

Important properties of the Tichnor soil—

Permeability: Slow
Available water capacity: High
Reaction: Very strongly acid to moderately acid
Hazard of erosion: None
Seasonal high water table: At a depth of 0.5 foot to 1.5 feet during winter and spring
Flooding: Frequent; 1 to 8 feet deep during winter and early spring

Included with these soils in mapping are small areas of the somewhat poorly drained Center and well drained Dubbs soils. Also included are a few areas of clayey soils in old meanders and sloughs. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. The main trees are water oak, cherrybark oak, sweetgum, American sycamore, water tupelo, and baldcypress. This map unit is suited to the production of bottom-land hardwoods that are tolerant of wetness. Cherrybark oak, eastern cottonwood, and American sycamore can be planted for commercial production. The main management concerns are the equipment limitation, plant competition, seedling mortality, and the hazard of windthrow. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. Competition from undesirable plants can interfere with reforestation after the trees are harvested. Site preparation and maintenance can help to control competing vegetation. Trees are subject to windthrow because the high water table limits the rooting depth (fig. 8). Managing for an uneven-aged stand or harvesting by area-selection methods can reduce the hazard of windthrow. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates.

These soils are poorly suited to pasture and hay because of the wetness and the flooding. Cattle must be moved to protected areas or to a higher elevation during periods of flooding.

Figure 8.—A windthrown tree in an area of Oaklimeter and Tichnor soils, frequently flooded.

These soils are not suited to urban uses because of the wetness and the flooding. Measures that prevent flooding are not feasible.

The capability subclass is Vw.

Oc—Ochlockonee fine sandy loam, occasionally flooded. This soil is very deep and well drained. It is on nearly level flood plains and in narrow drainageways. Slopes range from 0 to 2 percent and are simple and linear. Individual areas are long and narrow and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:

0 to 6 inches; dark yellowish brown fine sandy loam

Underlying material:

6 to 12 inches; dark yellowish brown fine sandy loam

12 to 19 inches; dark yellowish brown silt loam

19 to 22 inches; brownish yellow loamy sand

22 to 60 inches; dark yellowish brown and dark brown silt loam

Important soil properties—

Permeability: Moderate

Available water capacity: Moderate

Reaction: Generally strongly acid but less acid in the surface layer in limed areas

Hazard of erosion: None

Seasonal high water table: At a depth of 3 to 5 feet during winter
Flooding: Occasional, mostly during late winter and early spring

Included with this soil in mapping are some areas of moderately well drained or somewhat poorly drained soils. Also included, near creek channels, are a few areas of soils that are loamy sand throughout. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Almost all of the acreage is used for row crops. This soil is well suited to soybeans, cotton, and corn and to hay and pasture. It is rarely flooded during the growing season.

This soil is well suited to woodland. Eastern cottonwood, American sycamore, and loblolly pine can be planted for commercial production. Plant competition is a management concern, but it can be controlled by herbicides or mechanical removal.

This soil is not suited to urban uses because of the flooding. If the soil is used as a site for local roads and streets, suitable fill is needed to raise the roadbed above the level of flooding. Culverts or bridges are needed to allow discharge of floodwater.

The capability subclass is IIw.

PrB2—Providence silt loam, 1 to 5 percent slopes, eroded. This soil is very deep and moderately well drained. It is on undulating hills in the dissected uplands. It has a fragipan in the subsoil. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches; dark yellowish brown silt loam

Subsoil:
7 to 30 inches; yellowish brown silt loam
30 to 42 inches; a brittle fragipan of strong brown silt loam
42 to 60 inches; a brittle fragipan of strong brown clay loam that has brownish and grayish mottles

Important soil properties—

Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Moderate; part of the original surface layer removed by past erosion
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter
Flooding: None

Included with this soil in mapping are small areas of severely eroded soils on the more sloping parts of the landscape, the well drained Lexington soils in the slightly higher landscape positions, and the well drained Ochlockonee soils in drainageways. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Almost all of the acreage is used for row crops. A few small areas are used as pasture or woodland. This soil is well suited to most of the crops commonly grown in the county. Erosion is a hazard if cultivated crops are grown. Measures that help to control erosion include crop residue management, minimum tillage, and contour farming.

This soil is well suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Shortleaf pine and loblolly pine can be planted for commercial production. Windthrow is a hazard because of the fragipan, which restricts the rooting depth. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard. After the trees are harvested, careful management is needed to control competition from undesirable plants.

This soil is poorly suited to most urban uses. The moderately slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. The soil is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIe.

PrC2—Providence silt loam, 5 to 8 percent slopes, eroded. This soil is very deep and moderately well drained. It is on gently rolling hills in the dissected uplands. It has a fragipan in the subsoil. Slopes are complex and concave. Individual areas are irregular in shape and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches; dark yellowish brown silt loam

Subsoil:
7 to 30 inches; dark yellowish brown silt loam
30 to 42 inches; a brittle fragipan of strong brown silt loam
42 to 60 inches; a brittle fragipan of strong brown sandy clay loam

Important soil properties—

Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; part of the original surface layer removed by past erosion
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter
Flooding: None

Included with this soil in mapping are small areas of the well drained Lexington soils in the slightly higher landscape positions and the well drained Ochlockonee soils in drainageways. Also included are a few areas of Loring soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for row crops. A few small areas are used as pasture or woodland. This soil is suited to most of the crops commonly grown in the county, but erosion is a major hazard. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to keep soil loss within acceptable limits.

This soil is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Shortleaf pine and loblolly pine can be planted for commercial production. The hazards of windthrow and erosion and competition from undesirable plants are management concerns. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable plants. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to most urban uses. The moderately slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIe.

PrC3—Providence silt loam, 5 to 8 percent slopes, severely eroded. This soil is very deep and moderately well drained. It is on gently rolling hills in the dissected uplands. It has a fragipan in the subsoil. Slopes are mainly complex and convex. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 4 inches; dark yellowish brown silt loam

Subsoil:
4 to 18 inches; brown silt loam
18 to 46 inches; a brittle fragipan of strong brown silt loam that has brownish and grayish mottles
46 to 60 inches; yellowish red sandy loam that has brownish mottles

Important soil properties—

Permeability: Moderate above and below the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Reaction: Generally very strongly acid to moderately acid but less acid in the surface layer in limed areas
Hazard of erosion: Severe; all of the original surface layer and part of the subsoil removed by past erosion in most areas
Seasonal high water table: At a depth of 1.5 to 3.0 feet during winter
Flooding: None

Included with this soil in mapping are a few small areas of the well drained Lexington soils. These soils are in landscape positions similar to those of the Providence soil. Also included are a few small areas of soils that are sandy loam or sandy clay loam in the upper part of the subsoil and are on the steeper side slopes and small areas where erosion has removed practically all of the subsoil above the fragipan. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used for row crops. A few areas are used as pasture or woodland. This soil is poorly suited to row crops. Erosion is a hazard, and a restricted rooting depth reduces yields. Conservation measures, such as no-till farming and crop rotations that include grasses and legumes, may be necessary to keep soil loss within acceptable limits.

This soil is suited to pasture and hay. Using the soil for pasture or hay is effective in controlling erosion. Proper stocking rates and timely deferment of grazing help to keep the pasture in good condition.

This soil is well suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. After the trees are harvested, carefully managed reforestation is needed to control competition from undesirable understory plants. Windthrow is a hazard because of the fragipan, which

restricts the rooting depth. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is poorly suited to most urban uses. The moderately slow permeability is a limitation on sites for septic tank absorption fields. This limitation can be overcome by enlarging the absorption field or by constructing a specially designed system. Low strength is a limitation on sites for local roads and streets. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IVe.

Rb—Rosebloom silt loam, rarely flooded. This soil is very deep and poorly drained. It is on nearly level flood plains. It is partially protected from floodwater by levees. Slopes are simple and linear and range from 0 to 2 percent. Individual areas vary in shape and range from 10 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam that has brownish and grayish mottles

Subsoil:
9 to 26 inches; light gray silt loam
26 to 45 inches; light gray and gray silty clay loam that has brownish and grayish mottles

Substratum:
45 to 60 inches; light brownish gray silty clay loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid or strongly acid
Hazard of erosion: None
Seasonal high water table: Within a depth of 1 foot during winter and early spring
Flooding: Rare; partial protection provided by levees

Included with this soil in mapping are a few areas of soils that have a surface layer of brownish, stratified silt loam as much as 20 inches thick. Also included are small areas of somewhat poorly drained soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

All of the acreage has been cleared and is used for row crops. Levees are used to flood some areas for duck hunting in winter, but the water is drained and the soil is protected from flooding during the growing season. This soil is well suited to soybeans and grain sorghum. Levees as much as 10 feet high protect the soil from floodwater and allow earlier planting dates than is typical in unprotected areas.

This soil is suited to trees that are tolerant of wetness. Eastern cottonwood, American sycamore, and baldcypress can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard. Competition from undesirable plants can interfere with reforestation after the trees are harvested. Site preparation and maintenance can help to control competing vegetation.

This soil is not suited to most urban uses because of the wetness.

The capability subclass is IIIw.

Re—Rosebloom silt loam, frequently flooded. This soil is very deep and poorly drained. It is on nearly level flood plains. Slopes are simple and linear and range from 0 to 2 percent. Individual areas vary in shape and range from 10 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam that has brownish and grayish mottles

Subsoil:
9 to 26 inches; light gray silt loam
26 to 45 inches; light gray and gray silty clay loam that has brownish and grayish mottles

Substratum:
45 to 60 inches; light brownish gray silty clay loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid or strongly acid
Hazard of erosion: None
Seasonal high water table: Within a depth of 1 foot during winter and early spring
Flooding: Frequent; 1 to 4 feet deep for as much as 1 month or more during winter and early spring

Included with this soil in mapping are a few areas of soils that have a subsoil of clay, are in old sloughs, and are covered with water for 9 or more months of the year; near stream channels or meander scours, a few areas of soils that have strata of sandy loam or loamy sand in the lower part of the subsoil; and small areas of somewhat poorly drained soils. Also included are areas of soils that are moderately acid to neutral throughout. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. This soil is not suited to row crops and is poorly suited to pasture and hay because of the wetness and the flooding. Proper stocking rates and restricted use during wet periods help to keep the pasture in satisfactory condition.

This soil is suited to trees that are tolerant of wetness. Water tupelo and baldcypress can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard. Competition from undesirable plants can interfere with reforestation after the trees are harvested. Site preparation and maintenance can help to control competing vegetation.

This soil is not suited to urban uses because of the wetness and the flooding.

The capability subclass is Vw.

Rf—Rosebloom silt loam, depressional, frequently flooded. This soil is very deep and poorly drained. It is in depressions on flood plains. Slopes are simple and concave and are 0 to 1 percent. Individual areas vary in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam that has brownish and grayish mottles

Subsoil:
9 to 26 inches; light gray silt loam
26 to 45 inches; light gray and gray silty clay loam that has brownish and grayish mottles

Substratum:
45 to 60 inches; light brownish gray silty clay loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid or strongly acid
Hazard of erosion: None
Seasonal high water table: Near or above the surface for 3 to 6 months during winter and spring
Flooding: Frequent; 1 to 4 feet deep during winter and early spring

Included with this soil in mapping are a few areas of soils that have a subsoil of clay and small areas in old sloughs that are covered with water for 9 months or more during the year. Also included are areas of soils that are moderately acid to neutral throughout. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

This soil is poorly suited to woodland because it is covered with water for several months each year. Water tupelo and baldcypress can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, and the hazard of windthrow. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is not suited to row crops and urban uses because of the high water table and the flooding. Summer annuals that are tolerant of wetness can be grown for grazing in most years. Restricted use during wet periods helps to keep the pasture in satisfactory condition.

The capability subclass is VIw.

Rg—Rosebloom silt loam, frequently flooded, ponded. This soil is very deep and poorly drained. It is in deep depressions and slough meanders on flood plains. Slopes are simple and concave and are 0 to 1 percent. Individual areas vary in shape and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam that has brownish and grayish mottles

Subsoil:
9 to 26 inches; light gray silt loam
26 to 45 inches; light gray and gray silty clay loam that has brownish and grayish mottles

Substratum:
45 to 60 inches; light brownish gray silty clay loam that has brownish mottles

Important soil properties—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid or strongly acid
Hazard of erosion: None
Seasonal high water table: Near or above the surface throughout most years
Flooding: Frequent; 1 to 4 feet deep during winter and early spring

Included with this soil in mapping are a few areas of soils that have less than 18 percent or more than 35 percent clay in the subsoil. Also included are some small natural ponds. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

This soil is poorly suited to woodland because it is covered with water most of the time. Water tupelo and baldcypress can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, and the hazard of windthrow. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard.

This soil is not suited to farm or urban uses because it is extremely wet. It is valuable as habitat for wetland wildlife (fig. 9). Careful management is needed to protect the habitat.

The capability subclass is VIw.

Rh—Rosebloom-Center complex, frequently flooded. These very deep, nearly level soils are on flood plains. The Rosebloom soil is poorly drained and is on low flats. The Center soil is somewhat poorly drained and is on slight rises. Slopes are simple and linear and range from 0 to 2 percent. This map unit is about 60 percent Rosebloom soil and 30 percent Center soil. The two soils occur as areas so intricately mixed and so small that separating them in mapping is not practical. Individual areas range from 10 to 100 acres in size.

The typical sequence, depth, and composition of the layers in the Rosebloom soil are as follows—

Surface layer:
0 to 9 inches; brown silt loam that has brownish and grayish mottles

Subsoil:
9 to 26 inches; light gray silt loam
26 to 45 inches; light gray and gray silty clay loam that has brownish and grayish mottles

Substratum:
45 to 60 inches; light brownish gray silty clay loam that has brownish mottles

Important properties of the Rosebloom soil—

Permeability: Moderate
Available water capacity: High
Reaction: Very strongly acid or strongly acid
Hazard of erosion: None
Seasonal high water table: At or near the surface during late winter and early spring
Flooding: Frequent, during winter and early spring

The typical sequence, depth, and composition of the layers in the Center soil are as follows—

Surface layer:
0 to 6 inches; dark yellowish brown silt loam

Subsoil:
6 to 10 inches; dark yellowish brown silt loam
10 to 24 inches; yellowish brown silt loam that has grayish mottles
24 to 40 inches; light gray silty clay loam that has brownish mottles

Substratum:
40 to 60 inches; light yellowish brown silt loam that has grayish mottles

Important properties of the Center soil—

Permeability: Moderately slow
Available water capacity: High
Reaction: Strongly acid to slightly acid, commonly becoming less acid with increasing depth
Hazard of erosion: Slight
Seasonal high water table: At a depth of 1.0 to 2.5 feet during winter

Figure 9.—Wetland wildlife habitat in an area of Rosebloom silt loam, frequently flooded, ponded.

Flooding: Occasional, during late winter and early spring

Included with these soils in mapping are a few areas of the somewhat poorly drained Convent soils. Also included are a few small areas of soils that have a subsoil of clay and a few small areas of soils that have strata of sandy loam or loamy sand below the surface layer. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. This map unit is not suited to row crops because most areas are wet and are frequently flooded. The unit is suited to summer pasture that supports water-tolerant plants. Proper stocking rates and restricted use during wet periods help to keep the pasture in good condition.

This map unit is suited to trees that are tolerant of wetness. Eastern cottonwood and American sycamore can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard. Competition from undesirable plants can interfere with reforestation after the trees are harvested.

Site preparation and maintenance can help to control competing vegetation.

This map unit is not suited to urban uses because of the wetness and the flooding.

The capability subclass is Vw.

Ro—Routon silt loam. This soil is very deep and poorly drained. It is on flats in the loessial uplands and on nearly level terraces. Slopes are simple and linear and range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches; yellowish brown silt loam

Subsurface layer:
7 to 18 inches; light brownish gray silt loam that has brownish mottles

Subsoil:
18 to 50 inches; light brownish gray silt loam and silty clay loam having brownish mottles
50 to 60 inches; grayish brown silt loam

Important soil properties—

Permeability: Slow
Available water capacity: High
Reaction: Strongly acid to neutral, commonly becoming less acid with increasing depth
Hazard of erosion: None
Seasonal high water table: At or near the surface in winter and early spring
Flooding: None

Included with this soil in mapping are a few areas of soils that have an overwash layer of brownish silt loam as much as 12 inches thick. Also included are a few small areas of the somewhat poorly drained Center soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage is used for soybeans. This soil is well suited to summer annuals that do not require early planting. Drainage ditches help to remove excess water and thus allow earlier planting dates.

This soil is suited to pasture and hay if water-tolerant species are selected for planting. Grazing during wet periods can cause surface compaction and poor tilth. Proper stocking rates and restricted use during wet periods help to keep the pasture in good condition.

This soil is well suited to trees that are tolerant of wetness. Eastern cottonwood, American sycamore, and cherrybark oak can be planted for commercial production. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce this hazard. Competition from undesirable plants can interfere with reforestation after the trees are harvested. Site preparation and maintenance can help to control competing vegetation.

This soil is poorly suited to most urban uses because of the wetness. It is not suited to septic tank absorption fields because of the seasonal high water table. A better suited soil should be selected. The soil is poorly suited to local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIw.

Rs—Routon silt loam, ponded. This soil is very deep, poorly drained, and nearly level. It is in depressions on broad, low stream terraces. Slopes are simple and slightly concave and range from 0 to 2 percent. Individual areas are irregular in shape and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 7 inches; grayish brown silt loam

Subsurface layer:
7 to 18 inches; light brownish gray silt loam that has brownish mottles

Subsoil:
18 to 60 inches; light brownish gray silt loam and silty clay loam having brownish mottles

Important soil properties—

Permeability: Slow
Available water capacity: High
Reaction: Strongly acid to neutral, commonly becoming less acid with increasing depth
Hazard of erosion: None
Seasonal high water table: Near or above the surface in late winter and early spring
Flooding: Frequent, in late winter and early spring

Included with this soil in mapping are a few areas of soils that have an overwash layer of silt loam more than

Figure 10.—Hardwoods in an area of Routon silt loam, ponded.

12 inches thick. Also included are a few small areas of the somewhat poorly drained Center and poorly drained Tichnor soils. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Nearly all of the acreage is used as woodland (fig. 10). Because of the high water table and ponding, this soil is not suited to row crops. It can be used as summer pasture if water-tolerant species are selected for planting. Restricted use during wet periods helps to keep the pasture in satisfactory condition.

This soil is poorly suited to woodland because it is covered with water for several months each year. Water tupelo and baldcypress can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. The use of heavy equipment during wet periods can result in compaction and the formation of ruts. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival and early growth rates. Windthrow is a hazard during wet periods. Managing for an

uneven-aged stand or harvesting by area-selection methods can reduce this hazard. Competition from undesirable plants can interfere with reforestation after the trees are harvested. Site preparation and maintenance can help to control competing vegetation.

This soil is not suited to urban uses because of the wetness and the flooding. A better suited soil should be selected.

The capability subclass is Vw.

Rt—Routon-Center complex. These very deep, nearly level soils are on flood plains. The Routon soil is poorly drained and is on flats, and the Center soil is somewhat poorly drained and is on low ridges. Slopes are simple and linear and range from 0 to 2 percent. This map unit is about 50 percent Routon soil and 40 percent Center soil. The two soils occur as areas so intricately mixed and so small that separating them in mapping is not practical. Individual areas range from 10 to 200 acres in size.

The typical sequence, depth, and composition of the layers in the Routon soil are as follows—

Surface layer:
0 to 7 inches; yellowish brown silt loam

Subsurface layer:
7 to 18 inches; light brownish gray silt loam that has brownish mottles

Subsoil:
18 to 60 inches; light brownish gray silt loam and silty clay loam having brownish mottles

Important properties of the Routon soil—

Permeability: Slow
Available water capacity: High
Reaction: Strongly acid to neutral, commonly becoming less acid with increasing depth
Hazard of erosion: None
Seasonal high water table: At or near the surface in winter and early spring
Flooding: None

The typical sequence, depth, and composition of the layers in the Center soil are as follows—

Surface layer:
0 to 6 inches; brown silt loam

Subsoil:
6 to 48 inches; yellowish brown and light yellowish brown silt loam that has grayish mottles
48 to 55 inches; light brownish gray silt loam that has brownish mottles

Substratum:
55 to 60 inches; yellowish brown silt loam

Important properties of the Center soil—

Permeability: Moderately slow
Available water capacity: High
Reaction: Strongly acid to slightly acid, commonly becoming less acid with increasing depth
Hazard of erosion: Slight
Seasonal high water table: 1.0 to 2.5 feet below the surface during winter
Flooding: None

Included with these soils in mapping are small areas of Dubbs soils on slight rises. Also included, in the lower landscape positions, are small areas of soils that are subject to flooding. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage has been cleared and is used for row crops. A few areas are used as pasture or woodland. This map unit is well suited to soybeans and other summer annuals that require only a short growing season.

This map unit is suited to water-tolerant grasses for pasture and hay. Grazing during wet periods results in surface compaction and poor tilth. Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

This map unit is suited to trees that are tolerant of wetness. Cherrybark oak, eastern cottonwood, and American sycamore can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival rate. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce the hazard of windthrow. Site preparation and maintenance can help to control competing vegetation.

This map unit is poorly suited to most urban uses because of the seasonal high water table. A better suited soil should be selected. The unit is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIw.

Ru—Routon-Dubbs complex. These very deep, nearly level soils are on stream terraces. The poorly drained Routon soil is on flats, and the well drained Dubbs is on low ridges. Slopes are simple and linear and range from 0 to 2 percent. This map unit is about 50 percent Routon soil and 35 percent Dubbs soil. The two soils occur as areas so intricately mixed and so

small that separating them in mapping is not practical. Individual areas range from 10 to 200 acres in size.

The typical sequence, depth, and composition of the layers in the Routon soil are as follows—

Surface layer:
0 to 7 inches; yellowish brown silt loam

Subsurface layer:
7 to 18 inches; light brownish gray silt loam that has brownish mottles

Subsoil:
18 to 60 inches; light brownish gray silt loam and silty clay loam having brownish mottles

Important properties of the Routon soil—

Permeability: Slow
Available water capacity: High
Reaction: Strongly acid to neutral, commonly becoming less acid with increasing depth
Hazard of erosion: None
Seasonal high water table: At or near the surface in winter and early spring
Flooding: None

The typical sequence, depth, and composition of the layers in the Dubbs soil are as follows—

Surface layer:
0 to 7 inches; dark yellowish brown silt loam

Subsoil:
7 to 28 inches; brown silty clay loam
28 to 60 inches; brown and dark yellowish brown silt loam

Important properties of the Dubbs soil—

Permeability: Moderate
Available water capacity: High
Reaction: Strongly acid or moderately acid
Hazard of erosion: Slight
Seasonal high water table: None
Flooding: None

Included with these soils in mapping are small areas of the somewhat poorly drained Center soils on slight rises. Included areas are generally less than 2 acres in size. They make up about 5 to 10 percent of the map unit.

Most of the acreage has been cleared and is planted to row crops. Some areas are used as pasture or woodland. This map unit is well suited to soybeans, grain sorghum, and other summer annuals that can be planted in late spring.

This map unit is suited to pasture and hay plants that are tolerant of wetness. Grazing during wet periods results in surface compaction and poor tilth. Proper stocking rates, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

This map unit is suited to trees that are tolerant of wetness. Cherrybark oak, eastern cottonwood, and American sycamore can be planted for commercial production. The main management concerns are the equipment limitation, seedling mortality, the hazard of windthrow, and plant competition. Harvesting during dry periods and using low-pressure ground equipment helps to prevent damage to the surface layer. The seedling mortality rate may be high because of poor soil aeration. Special site preparation, such as installation of a surface drainage system and bedding, can increase the seedling survival rate. Managing for an uneven-aged stand or harvesting by area-selection methods can reduce the hazard of windthrow. Site preparation and maintenance can help to control competing vegetation.

This map unit is poorly suited to most urban uses because of the seasonal wetness. The Dubbs soil is suitable, but it is in small areas that commonly are surrounded by areas of the poorly drained Routon soil. The unit is limited as a site for local roads and streets because of low strength. This limitation can be overcome by construction measures that provide adequate subgrade material.

The capability subclass is IIIw.

SmE3—Smithdale loam, 12 to 25 percent slopes, severely eroded. This soil is very deep and well drained. It is on hilly, dissected uplands and the escarpments of high terraces. Slopes are complex and convex. Individual areas vary in shape and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 6 inches; dark brown loam

Subsoil:
6 to 30 inches; yellowish red sandy clay loam
30 to 60 inches; brown loamy sand that has thin strata of reddish brown sandy loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: Moderate
Reaction: Very strongly acid or strongly acid
Hazard of erosion: Severe; most of the original surface layer removed by past erosion
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are small areas where erosion has removed all of the surface layer and subsoil, exposing strata of sandy loam and loamy sand. Also included are some small areas of Lexington soils. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as pasture or woodland. Because of the hazard of erosion, this soil is not suited to row crops. It is suited to hay and pasture, but management is difficult because of the slope.

This soil is suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. Operating wheeled equipment on the dissected slopes is hazardous.

This soil is poorly suited to most urban uses because of the slope. Urban projects should be designed so that they conform to the natural slope of the land.

The capability subclass is VIIe.

SmF—Smithdale fine sandy loam, 25 to 35 percent slopes. This soil is very deep and well drained. It is on very hilly uplands. Slopes are complex and convex. Individual areas vary in shape and range from 5 to 100 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows—

Surface layer:
0 to 2 inches; very dark grayish brown fine sandy loam

Subsurface layer:
2 to 10 inches; yellowish brown fine sandy loam

Subsoil:
10 to 42 inches; yellowish red and red sandy clay loam
42 to 60 inches; red sandy loam

Important soil properties—

Permeability: Moderate in the upper part of the profile and moderately rapid in the lower part
Available water capacity: Moderate
Reaction: Very strongly acid or strongly acid
Hazard of erosion: Severe
Seasonal high water table: None
Flooding: None

Included with this soil in mapping are areas of Lexington soils on long ridgetops that are 75 to 125 feet wide. Also included are a few areas of soils that are brown or strong brown silty clay loam or silt loam in the upper part of the subsoil and are on the upper hillsides, a few areas of severely eroded soils, and a few areas of soils that have a clayey subsoil. Included areas are generally less than 2 acres in size. They make up about 10 to 15 percent of the map unit.

Most of the acreage is used as woodland. Because of the hazard of erosion, this soil is not suited to row crops. It is poorly suited to pasture and hay because of the slope.

This soil is suited to woodland. Loblolly pine and shortleaf pine can be planted for commercial production. Minimizing disturbance of the forest litter helps to control erosion. Operating wheeled equipment on the steep slopes is hazardous.

This soil is poorly suited to most urban uses because of the steep, complex slopes.

The capability subclass is VIIe.

UD—Udorthents, loamy, steep. These very deep, well drained soils are in areas that have been strip-mined for sand and gravel. The overburden of loess has been removed so that the underlying deposits of Coastal Plains sand and gravel are accessible. Slopes are mainly complex and convex and range from 10 to 50 percent.

The composition of these soils varies considerably because of variations in the extent to which the loess and the Coastal Plains material have been mixed during excavation. The texture is mainly sandy clay loam, sandy loam, silt loam, and loamy sand. The content of gravel is as much as 60 percent, by volume, in some areas. Reaction ranges from very strongly acid to moderately acid throughout the profile. Permeability is commonly moderate or moderately rapid.

Most of the acreage has a cover of grasses, weeds, brush, and small trees. The trees are mainly black locust and willow. A few areas are bare.

These soils are poorly suited to all farm and urban uses. Although trees can grow on the soils, harvesting timber could result in severe erosion and slippage.

The capability subclass is VIIe.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to food, feed, forage, fiber, and oilseed crops. It may be cultivated land, pasture, woodland, or other land, but it is not urban or built-up land or water areas. It either is used for food or fiber crops or is available for those crops. The soil qualities, growing season, and moisture supply are those needed for a well managed soil to produce a sustained high yield of crops in an economic manner. Prime farmland produces the highest yields with minimal expenditure of energy and economic resources, and farming it results in the least damage to the environment.

Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The level of acidity or alkalinity is acceptable. Prime farmland has few or no rocks and is permeable to water and air. It is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season. The slope ranges mainly from 0 to 5 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Some soils that have a seasonal high water table qualify as prime farmland only in areas where this limitation has been overcome by drainage measures. The need for these measures is indicated after the map unit name in table 5. Onsite evaluation is needed to determine whether or not the limitation has been overcome by corrective measures.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behaviorial characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Natural Resources Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1984, about 205,000 acres in the county was used as cropland and 25,000 acres was used for pasture or hay. The acreage of cropland has been increasing in recent years as more land is cleared and as abandoned cropland is restored. In 1984, approximately 100,000 acres in the county was used for soybeans, 15,000 acres for wheat, 65,000 acres for cotton, 9,000 acres for corn, and 7,000 acres for grain sorghum. The acreage of grain sorghum has increased steadily in the last few years. More cotton was planted in 1984 than in the previous 10 years.

The crops that are suited to the soils and climate in the county include soybeans, cotton, corn, grain sorghum, wheat, oats, barley, rye, sunflowers, and rice. Some of these crops are not commonly grown in the county but could be grown if economic conditions were favorable.

The plants that can be grown for pasture and hay in the county include fescue, common bermudagrass, midland bermudagrass, red clover, white clover, annual lespedeza, hybrid forage sorghum, and alfalfa. Bermudagrass, annual lespedeza, and hybrid forage sorghum are warm-season plants. They provide forage in summer but do not provide adequate forage in spring and fall. Fescue and clover are cool-season plants. They provide abundant forage in spring and fall but provide little forage late in summer because of high temperatures and dry conditions. Growing both warm- and cool-season plants lengthens the grazing season and reduces the amount of hay or silage required. Alfalfa grows best on deep, well drained soils, such as Memphis and Lexington soils.

A small acreage throughout the county is used for

sweet corn, tomatoes, peppers, strawberries, squash, beans, peas, watermelons, cantaloupes, or other fruits or vegetables. The latest information about growing field and specialty crops can be obtained from local offices of the Cooperative Extension Service and the Natural Resources Conservation Service.

The main management needs in the areas of cropland or pasture in the county are measures that help to control erosion, maintain tilth and fertility, and drain wet soils.

Erosion is a major management concern on about 75 percent of the cropland in the county. If the slope is more than 2 percent, erosion is a hazard under most cropping systems. Memphis, Loring, and Grenada are examples of soils that have slopes of 2 percent or more.

Soil loss through erosion is damaging for a number of reasons. Productivity is reduced as the surface layer is removed and part of the subsoil is incorporated into the plow layer. Erosion is especially damaging on soils that have a fragipan. As soil is removed by erosion, the root zone above the fragipan becomes thinner and the available water capacity is reduced. As a result, yields are reduced during years of moisture stress. Loss of the surface layer, which is higher in content of organic matter than the underlying layers, results in puddling and crusting. Control of erosion minimizes the sedimentation of streams and improves the quality of water for recreation, fish, and wildlife.

A management system that provides a protective cover, helps to control runoff, and increases the rate of water infiltration can help to prevent excessive erosion. On livestock farms forage crops of grasses and legumes help to control erosion, provide nitrogen, and improve tilth.

A system of conservation tillage that leaves a protective cover of crop residue on the surface can help to control erosion on sloping cropland. The protective cover of crop residue helps to control runoff and increases the rate of water infiltration. Conservation tillage also increases the content of organic matter in the soil, results in less compaction than conventional tillage, and saves time and fuel. Systems of conservation tillage have been developed for corn, cotton, and soybeans in the county.

Terraces and diversions reduce the length of slopes and thus help to control runoff and erosion. They are practical on deep, well drained soils that have uniform slopes. The Memphis soils that have slopes of less than 8 percent are well suited to terracing. Loring and Grenada soils are less well suited because they have a fragipan, which could be exposed in the terrace channels.

Other measures that can help to control erosion in the county are contour farming, crop residue management, field borders, a cropping sequence that includes grasses and legumes, and grassed waterways.

Soil tilth is an important factor affecting the germination of seeds, the infiltration of water into the soil, and weed control. Cloddiness can inhibit the ability of many herbicides to control weeds. Soils with good tilth are granular and porous.

Most of the soils used for crops in the county have a surface layer of silt loam that is light in color and low in content of organic matter. Generally, the structure of such soils is weak or moderate. During periods of intensive rainfall, a crust forms at the surface. When dry, the crust is hard and is somewhat impervious to water. It reduces the rate of water infiltration and increases the runoff rate. Regular additions of crop residue, manure, or other organic material improve soil structure and minimize crusting.

Wetness is a major management concern in some areas of the county. Some soils are so wet that the crops commonly grown in the county generally cannot be easily grown. Examples are Convent and Rosebloom soils. Unless drained, these somewhat poorly drained or poorly drained soils remain wet until late in spring and cannot be planted to crops at optimum planting dates. In many years yields are reduced because of late planting and wetness in the root zone. In many areas removal of surface water is needed to prevent crop damage and allow earlier planting dates.

The design of both surface and subsurface drainage systems varies with the kind of soil. A combination of surface and subsurface drains is needed in most areas of wet soils used for intensive row cropping.

In some areas in the county, wetness is caused by flooding. Areas that are frequently flooded or are subject to flooding of long duration should be left as woodland or planted to suitable timber species.

Many soils on uplands in the county are strongly acid or very strongly acid in their natural condition. Applications of agricultural lime are required to raise the pH level sufficiently for the good growth of most crops. Many soils on flood plains in the county are moderately acid to mildly alkaline and have a higher level of natural fertility than most of the soils in the uplands. Nonlegume crops respond well to applications of nitrogen fertilizer in the areas of soils on flood plains.

On all of the soils in the county, additions of lime and fertilizer should be based on the results of acidity tests, on the needs of the crop, and on the expected level of yields. The Cooperative Extension Service and some fertilizer companies operate soil testing laboratories and provide test results and recommendations concerning the kinds and amounts of fertilizer and lime to be applied.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the section "Detailed Soil Map Units" and in the yields table.

Woodland Management and Productivity

Joseph H. Paugh, forester, Natural Resources Conservation Service, helped prepare this section.

About 78,000 acres in Haywood County, or 23 percent of the total acreage, is used as woodland.

About 68,000 acres of the woodland is privately owned, and 9,700 acres is publicly owned.

The woodland in the county generally is on flood plains. It is dominated by the oak-gum-cypress forest type. The most common species are cherrybark oak, willow oak, water oak, swamp chestnut oak, sweetgum, eastern cottonwood, American sycamore, green ash, baldcypress, river birch, water tupelo, and red maple.

Some of the woodland in the county is in areas on uplands that are too steep for farming. These areas are dominated by the oak-hickory forest type. The most common species are southern red oak, white oak, black oak, chestnut oak, shagbark hickory, pignut hickory, mockernut hickory, bitternut hickory, red maple, and sweetgum. A few small stands of planted loblolly pine are in gullies or other severely eroded areas.

The average growth rate of the trees in Haywood County is 42 cubic feet per acre per year. The potential average growth rate is 87 cubic feet per acre per year. The flood plains in the county can produce more than 120 cubic feet per acre per year. The best growth potential in the uplands generally is on the lower third of north- and east-facing slopes, where the growth rate can reach 120 cubic feet per acre per year.

The woodland in the county is valuable not only because it can be used for timber production but also because it provides wildlife habitat, opportunities for recreation, natural beauty, and soil and water conservation *(7)*.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also affect tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section "Detailed Soil Map Units," the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. Table 7 summarizes this forestry information and rates the soils for a number of factors to be considered in forest management. *Slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the probability that damage will occur if site preparation or harvesting activities expose the soil. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of the *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, and the susceptibility of the surface layer to rutting and compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment must be used. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use for 2 to 6 months per year, or if special equipment is needed to prevent or minimize rutting and compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment use for more than 6 months per year, or if special equipment is needed to prevent or minimize rutting and compaction. Ratings of moderate or severe indicate a need to choose the best suited equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of *seedling mortality* refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by the kinds of soil or topographic conditions. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rooting depth, and the aspect of the slope. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is 25 to 50 percent; and *severe* if expected mortality is more than 50 percent. Ratings of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of the *windthrow hazard* indicate the

likelihood that trees will be uprooted by the wind. A restricted rooting depth is the main reason for windthrow. The rooting depth can be restricted by a seasonal high water table, by a fragipan, or by a combination of such factors as wetness, texture, structure, and depth. The risk is *slight* if strong winds damage trees but do not uproot them; *moderate* if strong winds blow over some trees and damage many trees; and *severe* if moderate or strong winds blow over many trees. Ratings of moderate or severe indicate that the stand should be carefully thinned or not thinned at all. Special equipment may be needed to prevent damage to shallow root systems in partial cutting operations. A plan for the periodic removal of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders adequate natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. Ratings of moderate or severe indicate the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and as a *volume* number. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. The index applies to fully stocked, even-aged, unmanaged stands.

The *volume* is the yield likely to be produced by the most important trees, expressed in cubic feet per acre per year calculated at the age of culmination of mean annual increment.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors among many that can influence the choice of trees for use in reforestation.

Recreation

Joseph H. Paugh, forester, Natural Resources Conservation Service, helped prepare this section.

Haywood County can be used for a wide variety of recreational activities. The potential is high for picnic and field sports areas, warm water fishing, big game hunting, small game hunting, and waterfowl hunting. The potential is medium for natural, scenic, and historic areas; vacation farms; vacation cabins; shooting preserves; campgrounds; riding stables; water sports areas; and golf courses.

The characteristics of the soils in the county generally favor recreational activities. Depth, permeability, texture, slope, and drainage affect the development of recreational enterprises. Most of the limitations caused by soil characteristics can be overcome by careful site selection and planning *(5, 6)*.

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table

11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm and is not dusty when dry. Strong slopes can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a fragipan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes.

Wildlife Habitat

Gerald Montgomery, biologist, Natural Resources Conservation Service, helped prepare this section.

Haywood County has a varied population of wildlife and fish. The abundance and distribution of any particular species depend on the land use, the amount of water, and the kind of vegetation. The species that prefer the openland habitat in areas of cropland, pasture, brushy fence rows, thickets, and scattered woodlots include cottontail rabbit, bobwhite quail, mourning dove, meadowlark, eastern bluebird, groundhog, and coyote. These species are most abundant in areas that are characterized by a diversity of vegetation. The species that prefer the woodland habitat in areas of upland woodlots and bottom-land hardwoods include white-tailed deer, gray squirrel, raccoon, wild turkey, and a variety of nongame birds. Shallow lakes and other wetlands provide breeding habitat for wood ducks and resting and feeding areas for other migratory waterfowl. These wetlands also are inhabited by furbearers, such as beaver mink, and muskrat, and by aquatic nongame birds. In most areas of the county, the habitat can be improved by increasing the amount of food, water, and cover that wildlife need.

The steams, lakes, and ponds in the county are inhabited by crappie, bream, largemouth bass, and catfish. Nongame species, such as gar, carp, buffalo, bowfin (grinnel), and drum, also are abundant, especially in the lakes.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are soybeans, corn, wheat, millet, and grain sorghum.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, switchgrass, clover, and annual lespedeza.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are crabgrass, goldenrod, beggarweed, ragweed, and partridge pea.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, maple, sweetgum, sycamore, dogwood, hickory, blackberry, and greenbrier. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are shrub lespedeza, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and baldcypress.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, and slope. Examples of wetland plants are smartweed, wild millet, cattail, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are wetness, slope, and permeability. Examples of shallow water areas are marshes, swamps, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas and bottom-land hardwood forests.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial,

and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm, dense layer; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 11 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and

site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, and flooding affect absorption of the effluent.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel are less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, slope, and flooding affect both types of landfill. Texture and soil reaction affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive

features that affect drainage, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, and susceptibility to flooding. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity. Availability of drainage outlets is not considered in the ratings.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope and wetness affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. A low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the "Glossary."

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and

Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at ⅓-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning

that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are depth to the seasonal high water table; the kind of water table—that is, perched or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field

capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(8)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fluvaquents (*Fluv*, meaning river, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fluvaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" *(9)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(8)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Adler Series

The Adler series consists of very deep, moderately well drained soils on flood plains. These soils formed in recent alluvium washed from loessial uplands. Slopes range from 0 to 2 percent.

Adler soils are geographically associated with Memphis, Loring, Grenada, and Convent soils. Memphis, Loring, and Grenada soils are on uplands. Memphis soils are well drained and have an argillic horizon. Loring and Grenada soils have a fragipan. Convent soils are in landscape positions similar to those of the Adler soils and are somewhat poorly drained.

Typical pedon of Adler silt loam, occasionally flooded, 8.4 miles west of Brownsville on Fulton Road, 0.6 mile south on Pepper Lane, 200 feet east of the road:

Ap—0 to 4 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many fine and very fine roots; moderately acid; clear smooth boundary.

C1—4 to 19 inches; dark yellowish brown (10YR 4/4) silt loam; few fine distinct light brownish gray (10YR 6/2) mottles; massive; friable; common fine roots; moderately acid; gradual smooth boundary.

C2—19 to 60 inches; mottled yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2) silt loam; massive; friable; few fine roots; common black manganese stains; slightly acid.

The Ap horizon has value of 4 or 5 and chroma of 3 or 4.

The C1 horizon has value of 4 or 5 and chroma of 4. It has few to many mottles in shades of gray, yellow, or brown and in some pedons has few or common red and black stains and concretions.

The C2 horizon has value of 4 to 6 and chroma of 1 or 2 and has few to many mottles in shades of yellow or brown, or it has no matrix color and is mottled in shades of brown, yellow, or gray. It has few or common red and black stains and concretions.

Some pedons have a Btgb horizon at a depth of more than 40 inches. This horizon has value of 5 or 6 and chroma of 1 or 2 and has few or common brownish mottles. It is silt loam.

Calloway Series

The Calloway series consists of very deep, somewhat poorly drained soils that have a fragipan. These soils formed in deposits of loess. Slopes range from 0 to 2 percent.

Calloway soils are geographically associated with Grenada, Routon, and Collins soils. Grenada soils are in the slightly higher landscape positions and are moderately well drained. Routon and Collins soils do not have a fragipan. Routon soils are on low flats and are poorly drained. Collins soils are on flood plains and are moderately well drained. They are stratified.

Typical pedon of Calloway silt loam, from exit 47 on Interstate 40, about 200 yards north on Stanton-Dancyville Road, 0.25 mile east on an abandoned county road, 20 yards north of the county road, 30 yards east of a borrow pit:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common iron and manganese concretions; neutral; clear smooth boundary.

Bw—9 to 20 inches; yellowish brown (10YR 5/4) silt loam; few fine distinct yellowish brown (10YR 5/8), pale brown (10YR 6/3), and light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; common iron and manganese concretions; strongly acid; clear smooth boundary.

E—20 to 30 inches; light brownish gray (10YR 6/2) silt loam; weak fine and medium granular structure; very friable; many fine and medium pores and voids; many iron and manganese concretions; strongly acid; gradual irregular boundary.

Btx—30 to 60 inches; light brownish gray (10YR 6/2) silt loam; common medium and coarse distinct light yellowish brown (10YR 6/4) mottles; moderate coarse and very coarse prismatic structure; firm; brittle; common fine and medium pores; common clay films in pores and on faces of prisms; prisms separated by thin seams of light gray (10YR 7/2) silt; common or many iron and manganese stains and concretions; strongly acid; gradual wavy boundary.

Depth to the fragipan ranges from 18 to 33 inches.

The A horizon has value of 4 or 5 and chroma of 3 or 4. It has few or common iron and manganese concretions.

The Bw horizon has value of 5 or 6. It has few to many mottles in shades of gray or brown and few or common iron and manganese concretions.

The E horizon has value of 6 or 7. It has a few brownish mottles in some pedons. It has few to many iron and manganese concretions.

The Btx horizon has value of 5 or 6 and chroma of 2 to 4. It has few to many grayish, yellowish, or brownish mottles and common or many iron and manganese stains and concretions.

Center Series

The Center series consists of very deep, somewhat poorly drained soils on terraces. These soils formed in deposits of loess. Slopes range from 0 to 2 percent.

Center soils are geographically associated with Routon and Dubbs soils. Routon soils are in the lower

landscape positions and are poorly drained. Dubbs soils are in the higher landscape positions and are well drained.

Typical pedon of Center silt loam, in an area of Routon-Center complex, 1.7 miles northwest of Bethel on Rudolph Road, 1,000 feet south of the road:

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; moderate medium granular structure; friable; common fine and very fine roots; slightly acid; abrupt smooth boundary.

Bt1—6 to 13 inches; yellowish brown (10YR 5/6) silt loam; common medium distinct yellowish brown (10YR 5/4), common medium distinct brown (10YR 5/3), and few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; friable; common fine roots; few faint clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—13 to 30 inches; light yellowish brown (10YR 6/4) silt loam; common fine and medium distinct light brownish gray (10YR 6/2) and common fine prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; common fine roots; common faint clay films on faces of peds; common manganese concretions; strongly acid; gradual wavy boundary.

Bt3—30 to 48 inches; yellowish brown (10YR 5/4) silt loam; many fine and medium distinct light brownish gray (10YR 6/2) and common fine distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; common manganese concentrations and concretions; strongly acid; gradual wavy boundary.

Btg—48 to 55 inches; light brownish gray (10YR 6/2) silt loam; common fine faint pale brown (10YR 6/3) and common medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; common manganese concentrations; slightly acid; gradual wavy boundary.

C—55 to 60 inches; yellowish brown (10YR 5/6) silt loam; few medium distinct brownish yellow (10YR 6/8), common fine and medium prominent light brownish gray (10YR 6/2) and light gray (10YR 7/2), and common medium distinct yellowish brown (10YR 5/4) mottles; massive; friable; few or common manganese concentrations; slightly acid.

The A horizon has value of 4 or 5 and chroma of 3 or 4.

The Bt horizon has value of 5 or 6. It has chroma of 4 to 6 in the upper part and chroma of 1 or 2 in the lower part. It has few to many mottles in shades of gray or brown and few or common iron and manganese concentrations and concretions. This horizon is silt loam or silty clay loam.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 6. It has few to many mottles in shades of gray or brown and few or common iron and manganese stains and concretions.

Collins Series

The Collins series consists of very deep, moderately well drained soils on flood plains. These soils formed in recent alluvium washed from loessial uplands. Slopes range from 0 to 2 percent.

Collins soils are geographically associated with Loring, Grenada, and Convent soils. Loring and Grenada soils are on uplands. They have a fragipan. Convent soils are in landscape positions similar to those of the Collins soils and are somewhat poorly drained.

Typical pedon of Collins silt loam, occasionally flooded, 1.1 miles east of Ko Ko to Carney Road, 1.1 miles east on Carney Road, 600 feet north of the road:

Ap—0 to 5 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium granular structure; friable; many fine and very fine roots; moderately acid; clear smooth boundary.

C1—5 to 15 inches; brown (10YR 5/3) silt loam; common thin bedding planes; massive; friable; common fine roots; strongly acid; clear smooth boundary.

C2—15 to 35 inches; brown (10YR 5/3) silt loam; common fine distinct light brownish gray (10YR 6/2) mottles; few thin bedding planes; massive; friable; common fine roots; strongly acid; gradual smooth boundary.

C3—35 to 60 inches; mottled yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2) silt loam; few thin bedding planes; massive; friable; few fine roots; strongly acid.

The A horizon and C1 horizons have value of 4 or 5 and chroma of 3 or 4. The C2 horizon has value of 4 to 6 and chroma of 2 to 4. It has few or common mottles in shades of gray, yellow, or brown. The C3 horizon has no matrix color and is mottled in shades of brown or gray, or it has hue of 10YR, value of 5 or 6, and chroma of 1 or 2.

Convent Series

The Convent series consists of very deep, somewhat poorly drained soils on flood plains. These soils formed

in recent alluvium washed from loessial uplands. Slopes range from 0 to 2 percent.

Convent soils are geographically associated with Loring, Grenada, and Adler soils. Loring and Grenada soils are on uplands and are moderately well drained. They have a fragipan. Adler soils are in landscape positions similar to those of the Convent soils and are moderately well drained.

Typical pedon of Convent silt loam, frequently flooded, 1.7 miles east of Stanton on Stanton-Ko Ko Road, 150 feet east of Big Muddy Creek, 300 feet south of the road:

Ap1—0 to 6 inches; brown (10YR 4/3) silt loam; weak medium granular structure; friable; many red iron stains and few black manganese stains; moderately acid; clear smooth boundary.

Ap2—6 to 11 inches; brown (10YR 4/3) silt loam; common medium faint dark yellowish brown (10YR 4/4) and few fine distinct grayish brown (10YR 5/2) mottles; massive; friable; common manganese stains and concentrations; moderately acid; gradual smooth boundary.

C1—11 to 18 inches; brown (10YR 5/3) silt loam; common medium faint dark yellowish brown (10YR 4/4), common medium faint brown (10YR 5/3), and common medium distinct light brownish gray (10YR 6/2) mottles; massive; friable; common iron and manganese stains and concretions; moderately acid; gradual smooth boundary.

C2—18 to 44 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct brown (10YR 4/3) and few medium distinct yellowish brown (10YR 5/4) mottles; massive; friable; common iron and manganese stains and concretions; moderately acid; gradual smooth boundary.

C3—44 to 60 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; slightly acid.

The A horizon has chroma of 3 or 4. The upper part of the C horizon has value of 4 or 5 and chroma of 2 or 3. It has common or many brownish or grayish mottles. The lower part has value of 5 or 6. It has common or many brownish or grayish mottles.

Dubbs Series

The Dubbs series consists of very deep, well drained soils on terraces. These soils formed in loamy alluvium. Slopes range from 1 to 5 percent.

Dubbs soils are geographically associated with Routon and Center soils. Routon soils are in the lower areas and are poorly drained. Center soils are in the slightly lower areas and are somewhat poorly drained.

Typical pedon of Dubbs silt loam, 1 to 5 percent slopes, eroded, 9 miles southwest of Brownsville on U.S. Highway 79, about 0.7 mile east on Shepp Road, 100 feet south of the road:

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium granular structure; friable; common fine roots; neutral; clear smooth boundary.

Bt1—7 to 28 inches; brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common faint clay films on faces of peds; common fine roots; common fine pores; few manganese stains on faces of peds; moderately acid; gradual smooth boundary.

Bt2—28 to 33 inches; brown (7.5YR 4/4) silt loam; moderate fine and medium subangular blocky structure; common pale brown (10YR 6/3) silt coatings on faces of peds; friable; common faint clay films and few manganese stains on faces of peds; few fine roots; many fine and medium pores; strongly acid; gradual wavy boundary.

Bt3—33 to 41 inches; dark yellowish brown (10YR 4/4) silt loam; few fine distinct strong brown (7.5YR 4/6) mottles; common pale brown (10YR 6/3) silt coatings on faces of peds; moderate medium prismatic structure parting to weak coarse subangular blocky; friable; common faint clay films on faces of peds and in pores; common fine and few medium pores; few manganese stains on faces of peds; strongly acid; gradual smooth boundary.

Bt4—41 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; common fine and few medium distinct strong brown (7.5YR 5/8) and few fine distinct brown (10YR 5/3) mottles; moderate coarse and very coarse prismatic structure parting to weak coarse subangular blocky; prisms separated by thin, tapering wedges of pale brown (10YR 6/3) silt; friable; common faint clay films in pores; strongly acid.

The A horizon has value of 4 or 5 and chroma of 3 or 4. The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It has brownish or grayish mottles and seams in most pedons. It is silt loam or silty clay loam. Some pedons have a 2C horizon. This horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It is sandy loam to loamy sand.

Grenada Series

The Grenada series consists of very deep, moderately well drained soils that have a fragipan. These soils formed in deposits of loess on uplands. Slopes range from 1 to 5 percent.

Grenada soils are geographically associated with Memphis, Loring, Convent, Calloway, Adler, and Collins

soils. Memphis soils are in the higher landscape positions and are well drained. They do not have a fragipan. Loring soils are on the higher hills. They are not bisequal. Convent soils are on flood plains and are somewhat poorly drained. They do not have a fragipan. Calloway soils are in the slightly lower landscape positions and are somewhat poorly drained. Adler and Collins soils are on flood plains. They are stratified and do not have a fragipan.

Typical pedon of Grenada silt loam, 1 to 5 percent slopes, eroded, 1.3 miles north of Belle Eagle on State Highway 54, about 0.8 mile west on Chilcott Road, 0.5 mile north on a field road, and about 1,200 feet due west of Harwell Road:

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium granular structure; friable; few fine roots; few manganese concretions; moderately acid; clear smooth boundary.

Bw—9 to 18 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few manganese concretions; strongly acid; clear wavy boundary.

E—18 to 22 inches; grayish brown (10YR 5/2) silt loam; common medium faint pale brown (10YR 6/3) mottles; weak coarse granular structure; friable; few fine roots; common fine and medium pores; common manganese concretions; very strongly acid; abrupt irregular boundary.

Btx1—22 to 51 inches; yellowish brown (10YR 5/4) silt loam; many medium distinct pale brown (10YR 6/3) and light brownish gray (10YR 6/2) and common fine and medium distinct yellowish brown (10YR 5/6) mottles; weak coarse and very coarse prismatic structure; firm; brittle; few fine roots in seams between prisms; common fine pores; few faint clay films in pores; thin seams of brown (10YR 5/3) and pale brown (10YR 6/3) silt loam separating prisms; common manganese and iron stains and concretions; very strongly acid; gradual wavy boundary.

Btx2—51 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; common medium and coarse distinct light brownish gray (10YR 6/2) and few fine faint yellowish brown (10YR 5/4) mottles; weak coarse and very coarse prismatic structure; firm; slightly brittle; common fine pores; few faint clay films in pores; thin seams of light brownish gray (10YR 6/2) silt loam separating prisms; many manganese and iron stains and concretions; strongly acid.

Depth to the fragipan ranges from 17 to 28 inches. The A horizon has chroma of 3 or 4. The Bw horizon has value of 4 or 5. It is silt loam or silty clay loam. The E horizon has value of 5 or 6. In some pedons it has brownish or grayish mottles. The Btx horizon has value of 4 or 5 and chroma of 3 to 6. It has few to many mottles in shades of gray or brown. It is silt loam or silty clay loam.

Lexington Series

The Lexington series consists of very deep, well drained soils on hills in the uplands. These soils formed in a mantle of loess and in the underlying loamy Coastal Plains deposits. Slopes range from 2 to 30 percent.

Lexington soils are geographically associated with Providence, Smithdale, and Memphis soils. Providence soils are in landscape positions similar to those of the Lexington soils and are moderately well drained. They have a fragipan. Smithdale soils are on the steeper side slopes. They have base saturation of less than 35 percent and have more sand in the upper part than the Lexington soils. Memphis soils are on ridgetops and the upper side slopes. They have less than 5 percent sand throughout.

Typical pedon of Lexington silt loam, 8 to 12 percent slopes, severely eroded, 0.8 mile east of Hillville to Goodman Road, 1.7 miles south on Goodman Road, 0.2 mile northeast on a field road, 25 feet east of the road:

Ap—0 to 5 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable; common fine and very fine roots; moderately acid; abrupt smooth boundary.

Bt1—5 to 20 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; common fine and very fine roots; strongly acid; gradual smooth boundary.

Bt2—20 to 36 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; few yellowish brown (10YR 5/4) silt coatings on faces of peds; few fine roots; strongly acid; gradual smooth boundary.

Bt3—36 to 40 inches; yellowish brown (10YR 5/6) silt loam; moderate coarse subangular blocky structure; friable; few faint clay films on faces of peds; common pale brown (10YR 6/3) silt coatings on faces of peds; few fine roots; strongly acid; gradual smooth boundary.

Bt4—40 to 50 inches; yellowish brown (10YR 5/6) silt loam; moderate coarse subangular blocky structure; friable; few faint clay films on faces of peds; few pale brown (10YR 6/3) silt coatings on faces of peds; strongly acid; clear smooth boundary.

2Bt5—50 to 60 inches; red (2.5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; strongly acid.

The Ap horizon has value of 4 or 5 and chroma of 3 or 4. The A horizon, if it occurs, has value of 4 and chroma of 2. It is silt loam.

The E horizon, if it occurs, is 3 to 6 inches thick. It has value of 5 or 6 and chroma of 4 to 6. It is silt loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6. It has few or common grayish silt coatings, which commonly increase in number with increasing depth. This horizon is silt loam or silty clay loam.

The 2Bt horizon has hue of 7.5YR, 5YR, or 2.5YR, value of 4 or 5, and chroma of 4 to 6. It is loam, sandy clay loam, or clay loam.

Loring Series

The Loring series consists of very deep, moderately well drained soils that have a fragipan. These soils formed in deposits of loess on uplands. Slopes range from 1 to 20 percent.

Loring soils are geographically associated with Grenada, Memphis, Adler, Collins, and Convent soils. Grenada soils are in the lower landscape positions. They are bisequal. Memphis, Adler, Collins, and Convent soils do not have a fragipan. Memphis soils are in the higher landscape positions and are well drained. Adler, Collins, and Convent soils are on flood plains. Adler and Collins soils are stratified. Convent soils are somewhat poorly drained.

Typical pedon of Loring silt loam, 1 to 5 percent slopes, severely eroded, 1.0 mile south of Belle Eagle on State Highway 54, about 1.0 mile east on Nick Thornton Road, 300 feet south of the road:

Ap—0 to 4 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium granular structure; friable; common fine roots; strongly acid; abrupt smooth boundary.

Bt—4 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; many pale brown (10YR 6/3) silt coatings on faces of peds; friable; few faint clay films on faces of peds; few fine roots; few fine pores; few manganese stains and concretions; strongly acid; gradual wavy boundary.

Btx1—14 to 24 inches; dark yellowish brown (10YR 4/4) silt loam; common fine distinct yellowish brown (10YR 5/8) and common medium faint brown (7.5YR 4/4) mottles; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; brittle; few fine roots in seams between prisms; common distinct clay films in pores; thin seams of pale brown (10YR 6/3) silt between prisms; few fine pores; common manganese stains and concretions; strongly acid; gradual wavy boundary.

Btx2—24 to 44 inches; brown (7.5YR 4/4) silt loam; common medium distinct light brownish gray (10YR 6/2) and pale brown (10YR 6/3) mottles; moderate coarse and very coarse prismatic structure; firm; brittle; few fine roots in seams between prisms; few distinct clay films in pores; thin seams of pale brown (10YR 6/3) silt between prisms; few fine pores; common manganese and iron stains and concretions; strongly acid; gradual smooth boundary.

BC—44 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; common fine and medium distinct pale brown (10YR 6/3) mottles; weak medium and coarse subangular blocky structure; friable; thin vertical seams of light brownish gray (10YR 6/2) silt between peds; few fine pores; strongly acid.

Depth to the fragipan ranges from 14 to 30 inches. The A horizon has value of 4 or 5 and chroma of 3 or 4. The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. In some pedons it has a few mottles and silt coatings with value of 4 to 6 and chroma of 3 or 4. The Btx horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6. It has mottles, silt coatings, and seams with value of 4 to 6 and chroma of 2 to 8. The BC horizon, if it occurs, has hue of 10YR or 7.5YR and chroma of 4 to 6. It has mottles and silt coatings with chroma of 2 or 3.

Memphis Series

The Memphis series consists of very deep, well drained soils that formed in loess on uplands and terraces. Slopes range from 1 to 40 percent.

Memphis soils are geographically associated with Loring, Grenada, Lexington, Smithdale, Adler, and Collins soils. Loring, Grenada, and Lexington soils are in landscape positions similar to those of the Memphis soils. Loring and Grenada are moderately well drained. They have a fragipan. Lexington soils have more than 15 percent sand within a depth of 48 inches. Smithdale soils are on hillsides. They have more than 20 percent sand throughout. Adler and Collins soils are on flood plains. They are stratified and do not have an argillic horizon.

Typical pedon of Memphis silt loam, 1 to 5 percent slopes, eroded, 6.5 miles northwest of Brownsville on State Highway 19 to Brier Creek Road, 1,000 feet past Brier Creek Road on State Highway 19, about 180 feet southwest of the road:

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.
Bt1—6 to 25 inches; brown (7.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct clay films on faces of peds; common fine roots; common fine pores; few manganese stains on faces of peds; strongly acid; gradual smooth boundary.
Bt2—25 to 41 inches; brown (7.5YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common faint clay films on faces of peds; common distinct pale brown (10YR 6/3) silt coatings on faces of peds; common fine roots; common fine and medium pores; strongly acid; gradual smooth boundary.
Bt3—41 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; moderate coarse and very coarse prismatic structure; friable; few faint clay films on faces of prisms and common faint clay films in pores; common distinct pale brown (10YR) silt coatings on faces of prisms; few fine roots; common fine and medium pores; strongly acid.

The Ap horizon has chroma of 3 or 4. The A horizon, if it occurs, is less than 4 inches thick. It has hue 10YR, value of 3, and chroma of 2 or 3. It is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It is silt loam or silty clay loam. It has few or common silt coatings in most pedons.

The C horizon, if it occurs, has a matrix color or a mottled pattern with value of 4 or 5 and chroma of 4 to 6. It has few or common silt coatings and seams in most pedons. It is silt loam.

The Memphis soils in Haywood County are taxadjuncts because their base saturation is slightly lower than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

Oaklimeter Series

The Oaklimeter series consists of very deep, moderately well drained soils on flood plains. These soils formed in alluvium. Slopes range from 0 to 2 percent. They are dominantly less than 2 percent.

Oaklimeter soils are geographically associated with the poorly drained Tichnor and Rosebloom soils. Tichnor soils are in the slightly lower landscape positions. They have an argillic horizon. Rosebloom soils are in the lower landscape positions. They have more than 18 percent clay in the particle-size control section.

Typical pedon of Oaklimeter silt loam, in an area of Oaklimeter and Tichnor soils, frequently flooded, 7.0 miles southwest of Brownsville on U.S. Highway 79, about 6.0 miles east on Powell Road, 150 feet east of a steel bridge and 45 feet south of the road:

A—0 to 7 inches; brown (10YR 4/3) silt loam; few fine distinct pale brown (10YR 6/3) mottles; moderate medium granular structure; friable; common fine and medium roots; strongly acid; clear smooth boundary.
Bw1—7 to 20 inches; brown (10YR 4/3) silt loam; common medium distinct light brownish gray (10YR 6/2) and yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; common fine and medium roots; common manganese stains; strongly acid; gradual smooth boundary.
Bw2—20 to 30 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct light gray (10YR 7/2) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few fine and medium roots; common manganese stains and concretions; strongly acid; gradual smooth boundary.
Bgb—30 to 46 inches; light gray (10YR 7/2) silt loam; common medium distinct light yellowish brown (10YR 6/4) mottles; weak very coarse prismatic structure parting to weak medium subangular blocky; friable; few light gray (10YR 7/1) silt coatings on faces of prisms; few roots; common dark iron and manganese stains and concretions; strongly acid; gradual smooth boundary.
Btgb—46 to 60 inches; light gray (10YR 7/2) silty clay loam; common medium prominent yellowish brown (10YR 5/8) mottles; moderate medium and coarse subangular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds and in pores; common dark iron and manganese stains and concretions; strongly acid.

Depth to the buried soil ranges from 25 to 50 inches. The A horizon has chroma of 3 or 4. The Bw horizon has value of 4 or 5 and chroma of 3 or 4. It has few or common mottles in shades of brown or gray. The Bgb horizon has value of 4 to 7. It has few to many brownish mottles. The Btgb horizon has value of 6 or 7. It has common or many brownish mottles and common or many iron and manganese concretions. It is silt loam or silty clay loam.

Ochlockonee Series

The Ochlockonee series consists of very deep, well drained soils on flood plains. These soils formed in

recent alluvium washed from upland soils that formed in loess and Coastal Plains sediments. Slopes range from 0 to 2 percent.

Ochlockonee soils are geographically associated with Lexington, Providence, and Smithdale soils on uplands. Lexington and Smithdale soils have an argillic horizon. Providence soils have a fragipan.

Typical pedon of Ochlockonee fine sandy loam, occasionally flooded, 1.3 miles east from Hillville to the junction of Goodman Road and Willroy Road; 2.4 miles east on Willroy Road to where it crosses a small creek; 2,200 feet southwest along a stream and 200 feet south of the creek:

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium granular structure; very friable; strongly acid; clear smooth boundary.

C1—6 to 12 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; very friable; strongly acid; clear smooth boundary.

C2—12 to 19 inches; dark yellowish brown (10YR 4/4) silt loam; common fine distinct yellowish brown (10YR 5/6) mottles; massive; friable; strongly acid; clear smooth boundary.

C3—19 to 22 inches; brownish yellow (10YR 6/6) loamy sand; single grain; loose; strongly acid; abrupt smooth boundary.

C4—22 to 32 inches; dark yellowish brown (10YR 4/4) silt loam; common fine and medium distinct light yellowish brown (10YR 6/4) mottles; massive; friable; stratified with thin layers of sandy loam; strongly acid; clear smooth boundary.

Ab—32 to 36 inches; dark brown (10YR 4/3) silt loam; common fine faint yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; strongly acid; clear smooth boundary.

Bwb—36 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; common fine faint yellowish brown (10YR 5/4) and dark brown (10YR 4/3) mottles; moderate medium subangular blocky structure; friable; common fine and medium pores; common manganese concretions; strongly acid.

The A horizon has value of 4 or 5 and chroma of 3 or 4.

The C horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. In some pedons it has few to many yellowish or brownish mottles. Grayish mottles are below a depth of 22 inches in some pedons. Individual strata in this horizon are sandy loam, fine sandy loam, silt loam, or loamy sand.

The Ab horizon, if it occurs, has chroma of 3 or 4. The Bwb horizon, if it occurs, has value of 4 or 5 and chroma of 3 or 4.

Providence Series

The Providence series consists of very deep, moderately well drained soils that have a fragipan. These soils are on uplands. They formed in a mantle of loess and in the underlying loamy Coastal Plains deposits. Slopes range from 1 to 12 percent.

Providence soils are geographically associated with Lexington and Smithdale soils. Lexington and Smithdale soils do not have a fragipan. They are well drained. Lexington soils are in landscape positions similar to those of the Providence soils. Smithdale soils are on hillsides.

Typical pedon of Providence silt loam, 5 to 8 percent slopes, severely eroded, 1.1 miles east-southeast of Ko Ko on Brownsville-Whiteville Road to Carney Road, 1.0 mile east on Carney Road, 50 feet south of the road:

Ap—0 to 4 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium granular structure; friable; moderately acid; clear smooth boundary.

Bt—4 to 18 inches; brown (7.5YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; common fine pores; strongly acid; gradual wavy boundary.

Btx1—18 to 37 inches; strong brown (7.5YR 4/6) silt loam; common fine and medium prominent pale brown (10YR 6/3) and light brownish gray (10YR 6/2) mottles; moderate coarse and very coarse prismatic structure; very firm; brittle; common distinct clay films on faces of prisms and in pores; common ¼- to 1-inch seams of light brownish gray (10YR 6/2) silt between prisms; many fine and medium pores; strongly acid; gradual smooth boundary.

Btx2—37 to 46 inches; strong brown (7.5YR 4/6) silt loam; common coarse faint dark yellowish brown (10YR 4/4) and common medium prominent pale brown (10YR 6/3) mottles; weak very coarse prismatic structure; very firm; brittle; few faint clay films in pores; common ¼- to ½-inch seams of light brownish gray (10YR 6/2) silt between prisms; common fine and medium pores; strongly acid; gradual smooth boundary.

2Bt—46 to 60 inches; yellowish red (5YR 5/6) sandy loam; few medium prominent pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds and in pores; few fine pores; strongly acid.

Depth to the fragipan ranges from 18 to 30 inches. The A horizon has value of 4 or 5. The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. It is silt loam or silty clay loam. The Btx horizon

has hue of 10YR or 7.5YR and value of 4 or 5. It has few to many grayish, brownish, or yellowish mottles. It is silt loam or silty clay loam. The 2Bt horizon has hue of 7.5YR, 5YR, or 2.5YR and value and chroma of 4 to 6. It is loam, sandy loam, or sandy clay loam.

Rosebloom Series

The Rosebloom series consists of very deep, poorly drained soils on flood plains. These soils formed in alluvium. Slopes range from 0 to 2 percent. They are dominantly less than 2 percent.

Rosebloom soils are geographically associated with Tichnor, Oaklimeter, and Center soils. Tichnor soils are in landscape positions similar to those of the Rosebloom soils. They have an argillic horizon. Oaklimeter soils are on the slightly higher flood plains and are moderately well drained. Center soils are in the higher landscape positions and are somewhat poorly drained. They have an argillic horizon.

Typical pedon of Rosebloom silt loam, frequently flooded, 9.0 miles north of Brownsville on State Highway 54, about 150 yards east of the road and 800 yards south of South Fork Forked Deer River:

A—0 to 9 inches; brown (10YR 5/3) silt loam; common fine faint brown (10YR 4/3) and light brownish gray (10YR 6/2) mottles; weak medium granular structure; friable; many fine roots; many iron and manganese stains; strongly acid; clear smooth boundary.

Bg1—9 to 26 inches; light gray (10YR 6/1) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; many fine and medium manganese stains and concretions; strongly acid; gradual smooth boundary.

Bg2—26 to 34 inches; light gray (10YR 7/1) silty clay loam; few fine and medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; common fine roots; common fine iron stains; common manganese concretions; strongly acid; gradual smooth boundary.

Bg3—34 to 45 inches; gray (N 5/0) silty clay loam; common medium faint light brownish gray (2.5Y 6/2) mottles; moderate medium subangular blocky structure; friable; few roots; common iron and manganese stains and concretions; strongly acid; gradual smooth boundary.

Cg—45 to 60 inches; light brownish gray (2.5Y 6/2) silty clay loam; few medium distinct light olive brown (2.5Y 5/4) mottles; massive; friable; common iron stains and concretions; many large and small manganese concentrations and common small manganese concretions; strongly acid.

The A horizon has value of 4 to 6 and chroma of 2 or 3. The Bg horizon has hue of 10YR or 2.5Y. It has value of 6 or 7 and chroma of 1 or 2 or value of 5 and chroma of 1. It is silt loam or silty clay loam. The C horizon has hue of 2.5Y, value of 5 or 6, and chroma of 1 or 2. It is silt loam or silty clay loam.

Routon Series

The Routon series consists of very deep, poorly drained soils on terraces and in depressions in the uplands. These soils formed in loess. Slopes range from 0 to 2 percent. They are dominantly less than 2 percent.

Routon soils are geographically associated with Calloway, Center, and Dubbs soils. Calloway soils are on the slightly higher uplands and are somewhat poorly drained. They have a fragipan. Center soils are on the slightly higher terraces and are somewhat poorly drained. Dubbs soils are on the higher terraces and are well drained.

Typical pedon of Routon silt loam, 9.3 miles west of Brownsville on State Highway 54 and 1,600 feet west of the intersection of State Highway 54 and Bond Ferry Road, 40 feet south of State Highway 54 and 30 feet east of a field road:

Ap—0 to 7 inches; brown (10YR 5/3) silt loam; few fine faint light brownish gray mottles; weak medium granular structure; friable; few fine roots; moderately acid; clear smooth boundary.

Eg1—7 to 11 inches; light brownish gray (10YR 6/2) silt loam; many fine distinct dark yellowish brown (10YR 4/4) mottles; weak medium granular structure; friable; few fine roots; common manganese stains; strongly acid; abrupt smooth boundary.

Eg2—11 to 18 inches; light brownish gray (10YR 6/2) silt loam; common medium prominent light yellowish brown (2.5Y 6/4) mottles; weak coarse subangular blocky structure; friable; few fine roots; common fine pores; common manganese stains and concretions; strongly acid; gradual wavy boundary.

Btg1—18 to 30 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct light yellowish brown (2.5Y 6/4) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; common iron and manganese concretions and stains; strongly acid; gradual wavy boundary.

Btg2—30 to 50 inches; light brownish gray (2.5Y 6/2) silty clay loam; common fine distinct light yellowish brown (2.5Y 6/4) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; many manganese concretions and common iron and

manganese stains; neutral; gradual wavy boundary.
Btg3—50 to 60 inches; grayish brown (10YR 5/2) silt loam; weak medium and coarse subangular blocky structure; friable; few faint clay films in pores; common manganese stains and concretions; neutral.

The A horizon has value of 4 or 5 and chroma of 2 or 3. The E horizon has hue of 10YR or 2.5Y. The Btg horizon has hue of 10YR or 2.5Y. It has value of 5 and chroma of 1 or value of 6 and chroma of 1 or 2. It has few or common mottles in shades of brown. It is silt loam or silty clay loam.

Smithdale Series

The Smithdale series consists of very deep, well drained soils that formed in loamy Coastal Plains sediments on dissected uplands. Slopes range from 5 to 35 percent.

Smithdale soils are geographically associated with Lexington, Providence, and Memphis soils in the higher landscape positions. Lexington and Memphis soils have base saturation of more than 35 percent. Providence soils have a fragipan.

Typical pedon of Smithdale fine sandy loam, 25 to 35 percent slopes, 1.3 miles east from Hillville to the junction of Goodman Road and Willroy Road, 1.65 miles along Willroy Road, 400 feet north of the road:

Oi—1 inch to 0; slightly decomposed leaf litter.
A—0 to 2 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many fine, medium, and coarse roots; strongly acid; clear smooth boundary.
E—2 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; common fine, medium, and coarse roots; strongly acid; gradual smooth boundary.
Bt1—10 to 18 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine and medium roots; strongly acid; gradual smooth boundary.
Bt2—18 to 42 inches; red (2.5YR 4/6) sandy clay loam; few fine distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; few fine roots; very strongly acid; gradual smooth boundary.
Bt3—42 to 60 inches; red (2.5YR 4/6) sandy loam; weak coarse subangular blocky structure; friable; few faint clay films on faces of peds; sand grains bridged and coated with clay and sesquioxides; few fine roots; very strongly acid.

The A horizon has chroma of 1 or 2. The Ap horizon, if it occurs, has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is loam.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It is fine sandy loam or sandy loam.

The Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8. It is commonly clay loam or sandy clay loam, but the range includes sandy loam in the lower part. Some pedons have a BC horizon, which is loamy sand.

Smithdale loam, 12 to 25 percent slopes, severely eroded (map unit SmE3), is a taxadjunct because it has slightly more sand in the lower part of the solum than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil.

Tichnor Series

The Tichnor series consists of very deep, poorly drained soils that formed in alluvium on flood plains. Slopes range from 0 to 2 percent. They are dominantly less than 2 percent.

Tichnor soils are geographically associated with Oaklimeter, Dubbs, and Rosebloom soils. Oaklimeter and Rosebloom soils are in landscape positions similar to those of the Tichnor soils. Oaklimeter soils are moderately well drained. Rosebloom soils do not have an argillic horizon. Dubbs soils are in the slightly higher landscape positions and are well drained.

Typical pedon of Tichnor silt loam, in an area of Oaklimeter and Tichnor soils, frequently flooded, 7.0 miles southwest of Brownsville on U.S. Highway 79 to Powell Road, 1.1 miles east on Powell Road, 200 yards south of the road:

A—0 to 11 inches; dark yellowish brown (10YR 4/3) silt loam; common fine and medium faint brown (10YR 5/3) mottles; moderate medium granular structure; friable; common fine and medium and few coarse roots; common manganese stains; strongly acid; clear smooth boundary.
Eg—11 to 36 inches; light gray (10YR 7/2) silt loam; many fine and medium prominent dark yellowish brown (10YR 4/4) and common fine prominent strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine and medium roots; many fine and medium pores; common manganese stains and concretions; strongly acid; gradual smooth boundary.
Btg—36 to 60 inches; light brownish gray (10YR 6/2) silty clay loam; moderate coarse subangular blocky structure; firm; common pores and voids; common distinct gray (10YR 5/1) clay films on faces of peds

and in pores and voids; many iron and manganese stains and concretions; strongly acid.

The A horizon has chroma of 1 to 3. The Eg horizon has value of 5 to 7 and chroma of 1 or 2. It has few to many brownish or yellowish mottles. The Btg horizon has value of 5 or 6 and chroma of 1 or 2. In some pedons it has few to many brownish or yellowish mottles. It is silt loam or silty clay loam.

References

(1) American Association of State Highway and Transportation Officials. 1986. Standard specifications for highway materials and methods of sampling and testing. Ed. 14, 2 vols.

(2) American Society for Testing and Materials. 1993. Standard classification of soils for engineering purposes. ASTM Stand. D 2487.

(3) Corlew, Robert E. 1981. Tennessee—a short history.

(4) Goodspeed Publishing Company. 1887. History of Tennessee. (Reprinted in 1978)

(5) Tennessee Department of Conservation. 1976. Statewide comprehensive outdoor recreation plan, 1976 county supply, Tennessee SCORP. Append. 1, Midwest Resour. Inst.

(6) United States Department of Agriculture. 1970. An appraisal of potential for outdoor recreational development—Haywood County. Soil Conserv. Serv.

(7) United States Department of Agriculture. 1971. Forest statistics for Tennessee counties. Forest Serv. Resour. Bull. SO-32.

(8) United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436.

(9) United States Department of Agriculture. 1993. Soil survey manual. U.S. Dep. Agric. Handb. 18.

(10) Williams, Samuel Cole. 1930. Beginnings of west Tennessee: In the land of the Chickasaws.

Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, for example, fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Flood plain. A nearly level alluvial plain that borders a

stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. The major horizons are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, any plowed or disturbed surface layer.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is in part a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) granular, prismatic, or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Hard, consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by the wind.

Low strength. The soil is not strong enough to support loads.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity,

consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil, adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral

fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from about 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and

clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1951-81 at Brownsville, Tennessee)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	48.2	28.9	38.6	74	4	42	4.66	2.25	6.73	8	2.9
February	53.1	32.1	42.6	77	8	59	4.57	2.46	6.42	7	1.7
March	62.0	40.2	51.1	82	18	171	5.52	3.14	7.63	8	.9
April	73.8	50.6	62.2	88	30	370	5.60	3.16	7.75	8	.0
May	81.3	58.2	69.8	94	39	614	4.96	2.46	7.12	7	.0
June	88.6	66.0	77.3	99	50	819	3.54	1.80	5.06	5	.0
July	91.5	69.6	80.6	100	55	949	4.23	1.92	6.21	6	.0
August	90.8	67.7	79.3	100	53	908	3.15	.83	5.00	5	.0
September	85.0	60.9	73.0	98	42	690	3.76	1.62	5.62	5	.0
October	75.2	48.6	61.9	92	29	378	2.39	1.01	3.58	4	.0
November	62.1	39.4	50.8	82	17	108	4.13	1.95	6.00	6	.1
December	52.1	32.5	42.3	74	9	32	4.50	2.23	6.46	7	.5
Yearly:											
Average	72.0	49.6	60.8	---	---	---	---	---	---	---	---
Extreme	---	---	---	102	0	---	---	---	---	---	---
Total	---	---	---	---	---	5,140	51.01	43.32	53.38	76	6.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1951-81 at Brownsville, Tennessee)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 26	Apr. 3	Apr. 14
2 years in 10 later than--	Mar. 19	Mar. 29	Apr. 9
5 years in 10 later than--	Mar. 5	Mar. 20	Apr. 1
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 3	Oct. 27	Oct. 16
2 years in 10 earlier than--	Nov. 9	Nov. 1	Oct. 21
5 years in 10 earlier than--	Nov. 19	Nov. 9	Oct. 29

TABLE 3.--GROWING SEASON

(Recorded in the period 1951-81 at Brownsville, Tennessee)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	231	215	193
8 years in 10	241	221	199
5 years in 10	258	234	210
2 years in 10	276	246	221
1 year in 10	285	253	227

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Ad	Adler silt loam, occasionally flooded	38,840	11.5
Ca	Calloway silt loam	8,090	2.4
Ce	Center silt loam	1,140	0.3
Co	Collins silt loam, occasionally flooded	12,090	3.5
Ct	Convent silt loam, rarely flooded	290	0.1
Cv	Convent silt loam, frequently flooded	16,460	4.8
Db	Dubbs silt loam, 1 to 3 percent slopes, occasionally flooded	280	0.1
DuB2	Dubbs silt loam, 1 to 5 percent slopes, eroded	1,980	0.6
GrB2	Grenada silt loam, 1 to 5 percent slopes, eroded	5,950	1.7
GrB3	Grenada silt loam, 1 to 5 percent slopes, severely eroded	720	0.2
LeB2	Lexington silt loam, 2 to 5 percent slopes, eroded	1,450	0.4
LeC2	Lexington silt loam, 5 to 8 percent slopes, eroded	400	0.1
LeC3	Lexington silt loam, 5 to 8 percent slopes, severely eroded	1,530	0.4
LeD3	Lexington silt loam, 8 to 12 percent slopes, severely eroded	2,500	0.7
LgC3	Lexington-Providence complex, 5 to 8 percent slopes, severely eroded	530	0.2
LgD3	Lexington-Providence complex, 8 to 12 percent slopes, severely eroded	3,560	1.0
LhD	Lexington-Smithdale association, 8 to 12 percent slopes	760	0.2
LhE	Lexington-Smithdale association, 12 to 25 percent slopes	5,270	1.5
LkD	Lexington-Smithdale-Gullied land complex, 5 to 12 percent slopes	1,890	0.6
LkE	Lexington-Smithdale-Gullied land complex, 12 to 30 percent slopes	2,640	0.8
LoB2	Loring silt loam, 1 to 5 percent slopes, eroded	24,370	7.1
LoB3	Loring silt loam, 1 to 5 percent slopes, severely eroded	22,310	6.5
LoC3	Loring silt loam, 5 to 8 percent slopes, severely eroded	37,360	11.0
LoD3	Loring silt loam, 8 to 12 percent slopes, severely eroded	2,920	0.9
LPD	Loring and Memphis soils, 5 to 12 percent slopes, gullied	950	0.3
LPE	Loring and Memphis soils, 12 to 30 percent slopes, gullied	590	0.2
MaA	Memphis silt loam, terrace, 0 to 2 percent slopes	230	0.1
MeB2	Memphis silt loam, 1 to 5 percent slopes, eroded	24,240	7.1
MeC3	Memphis silt loam, 5 to 8 percent slopes, severely eroded	17,290	5.1
MeD3	Memphis silt loam, 8 to 12 percent slopes, severely eroded	4,850	1.4
MeE3	Memphis silt loam, 12 to 20 percent slopes, severely eroded	1,520	0.4
MeF	Memphis silt loam, 20 to 40 percent slopes	200	0.1
OA	Oaklimeter and Tichnor soils, frequently flooded	32,230	9.4
Oc	Ochlockonee fine sandy loam, occasionally flooded	4,070	1.2
PrB2	Providence silt loam, 1 to 5 percent slopes, eroded	920	0.3
PrC2	Providence silt loam, 5 to 8 percent slopes, eroded	630	0.2
PrC3	Providence silt loam, 5 to 8 percent slopes, severely eroded	2,370	0.7
Rb	Rosebloom silt loam, rarely flooded	3,500	1.0
Re	Rosebloom silt loam, frequently flooded	18,070	5.3
Rf	Rosebloom silt loam, depressional, frequently flooded	1,490	0.4
Rg	Rosebloom silt loam, frequently flooded, ponded	1,420	0.4
Rh	Rosebloom-Center complex, frequently flooded	1,490	0.4
Ro	Routon silt loam	24,830	7.3
Rs	Routon silt loam, ponded	3,790	1.1
Rt	Routon-Center complex	1,760	0.5
Ru	Routon-Dubbs complex	1,060	0.3
SmE3	Smithdale loam, 12 to 25 percent slopes, severely eroded	110	*
SmF	Smithdale fine sandy loam, 25 to 35 percent slopes	510	0.1
UD	Udorthents, loamy, steep	50	*
	Water	300	0.1
	Total	341,800	100.0

* Less than 0.1 percent.

TABLE 5.--PRIME FARMLAND

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
Ad	Adler silt loam, occasionally flooded
Ca	Calloway silt loam
Ce	Center silt loam
Co	Collins silt loam, occasionally flooded
Ct	Convent silt loam, rarely flooded
Db	Dubbs silt loam, 1 to 3 percent slopes, occasionally flooded
DuB2	Dubbs silt loam, 1 to 5 percent slopes, eroded
GrB2	Grenada silt loam, 1 to 5 percent slopes, eroded
LeB2	Lexington silt loam, 2 to 5 percent slopes, eroded
LoB2	Loring silt loam, 1 to 5 percent slopes, eroded
MaA	Memphis silt loam, terrace, 0 to 2 percent slopes
MeB2	Memphis silt loam, 1 to 5 percent slopes, eroded
Oc	Ochlockonee fine sandy loam, occasionally flooded
PrB2	Providence silt loam, 1 to 5 percent slopes, eroded
Rb	Rosebloom silt loam, rarely flooded (where drained)
Ro	Routon silt loam (where drained)
Rt	Routon-Center complex (where drained)
Ru	Routon-Dubbs complex (where drained)

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Wheat	Grain sorghum	Tall fescue-ladino
		Lbs	Bu	Bu	Bu	Bu	AUM*
Ad---------- Adler	IIw	800	120	35	50	120	9.5
Ca---------- Calloway	IIw	750	95	40	35	90	9.0
Ce---------- Center	IIw	700	90	40	40	90	9.0
Co---------- Collins	IIw	800	110	40	40	120	9.5
Ct---------- Convent	IIw	875	95	40	35	90	9.0
Cv---------- Convent	IVw	---	---	---	---	---	---
Db---------- Dubbs	IIw	700	90	35	45	100	9.0
DuB2---------- Dubbs	IIe	750	90	35	45	90	9.5
GrB2---------- Grenada	IIe	700	85	30	40	85	8.0
GrB3---------- Grenada	IIIe	600	80	20	30	80	7.5
LeB2---------- Lexington	IIe	750	90	45	45	90	9.5
LeC2---------- Lexington	IIIe	600	75	30	40	80	8.5
LeC3---------- Lexington	IVe	550	60	25	30	70	8.0
LeD3---------- Lexington	VIe	---	---	---	---	---	7.5
LgC3---------- Lexington-Providence	IVe	500	55	23	35	65	7.0
LgD3---------- Lexington-Providence	VIe	---	---	---	---	---	6.5
LhD:							
Lexington------	IVe	550	70	25	35	65	6.5
Smithdale------	IVe	400	55	25	25	50	5.5
LhE:							
Lexington------	VIe	---	---	---	---	---	6.0

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Wheat	Grain sorghum	Tall fescue-ladino
		Lbs	Bu	Bu	Bu	Bu	AUM*
LhE: Smithdale	VIe	---	---	---	---	---	5.0
LkD: Lexington-Smithdale-Gullied land	VIIe	---	---	---	---	---	4.0
LkE: Lexington-Smithdale-Gullied land	VIIe	---	---	---	---	---	4.0
LoB2: Loring	IIe	700	90	35	45	90	8.0
LoB3: Loring	IIIe	600	75	25	37	85	7.5
LoC3: Loring	IVe	500	65	20	32	75	7.0
LoD3: Loring	VIe	---	---	---	---	---	6.5
LPD: Loring and Memphis	VIIe	---	---	---	---	---	6.0
LPE: Loring and Memphis	VIIe	---	---	---	---	---	5.0
MaA: Memphis	I	850	120	45	45	110	10.0
MeB2: Memphis	IIe	750	100	40	45	100	9.5
MeC3: Memphis	IVe	550	75	25	35	70	7.0
MeD3: Memphis	VIe	---	---	---	---	---	7.0
MeE3: Memphis	VIe	---	---	---	---	---	6.0
MeF: Memphis	VIIe	---	---	---	---	---	5.0
OA: Oaklimeter and Tichnor	Vw	---	---	---	---	---	5.0
Oc: Ochlockonee	IIw	800	110	40	40	90	8.0
PrB2: Providence	IIe	700	80	35	40	80	7.5

See footnote at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Cotton lint	Corn	Soybeans	Wheat	Grain sorghum	Tall fescue-ladino
		Lbs	Bu	Bu	Bu	Bu	AUM*
PrC2---------- Providence	IIIe	500	70	30	40	80	7.5
PrC3---------- Providence	IVe	450	55	20	35	75	7.0
Rb---------- Rosebloom	IIIw	---	---	30	30	70	7.0
Re---------- Rosebloom	Vw	---	---	---	---	---	4.0
Rf, Rg---------- Rosebloom	VIw	---	---	---	---	---	3.0
Rh---------- Rosebloom-Center	Vw	---	---	---	---	---	4.5
Ro---------- Routon	IIIw	450	65	35	40	70	7.0
Rs---------- Routon	Vw	---	---	---	---	---	4.0
Rt---------- Routon-Center	IIIw	560	76	38	---	70	7.0
Ru---------- Routon-Dubbs	IIIw	615	75	37	---	70	7.0
SmE3---------- Smithdale	VIIe	---	---	---	---	---	4.0
SmF---------- Smithdale	VIIe	---	---	---	---	---	4.0
UD---------- Udorthents	VIIe	---	---	---	---	---	---

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available)

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
Ad---------- Adler	Slight	Moderate	Slight	Slight	Moderate	Eastern cottonwood--	120	186	Eastern cottonwood, black walnut, American sycamore.
						Green ash----------	95	57	
						Water oak----------	100	100	
						Willow oak----------	100	100	
						Sweetgum----------	100	143	
						American sycamore---	115	186	
Ca---------- Calloway	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine-------	80	124	Eastern cottonwood, American sycamore, cherrybark oak.
						Cherrybark oak------	80	114	
						Shortleaf pine------	70	114	
						Sweetgum----------	80	86	
						Water oak----------	80	71	
Ce---------- Center	Slight	Moderate	Slight	Slight	Moderate	Southern red oak----	75	57	Eastern cottonwood, American sycamore, cherrybark oak.
						Eastern cottonwood--	95	114	
						Water oak----------	85	86	
						Sweetgum----------	90	100	
						Yellow-poplar-------	90	86	
						American sycamore---	90	100	
Co---------- Collins	Slight	Moderate	Slight	Slight	Moderate	Green ash----------	95	57	American sycamore, eastern cottonwood, black walnut.
						Eastern cottonwood--	115	172	
						Cherrybark oak------	110	57	
Ct---------- Convent	Slight	Moderate	Slight	Moderate	Moderate	Eastern cottonwood--	120	186	Eastern cottonwood, American sycamore.
						Sweetgum----------	110	172	
						American sycamore---	115	186	
						Water oak----------	100	100	
						Green ash----------	80	57	
Cv---------- Convent	Slight	Moderate	Moderate	Moderate	Moderate	Eastern cottonwood--	105	10	Eastern cottonwood, American sycamore.
						American sycamore---	115	186	
Db---------- Dubbs	Slight	Moderate	Slight	Slight	Slight	Cherrybark oak------	100	143	Cherrybark oak, loblolly pine, black walnut.
						Eastern cottonwood--	100	124	
						Green ash----------	80	57	
						Sweetgum----------	95	114	
						Water oak----------	90	86	
DuB2---------- Dubbs	Slight	Slight	Slight	Slight	Slight	Cherrybark oak------	100	143	Cherrybark oak, loblolly pine, black walnut.
						Eastern cottonwood--	100	124	
						Green ash----------	80	57	
						Sweetgum----------	95	114	
GrB2, GrB3------ Grenada	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine-------	85	114	Cherrybark oak, loblolly pine, shortleaf pine.
						Southern red oak----	80	57	
						Cherrybark oak------	85	100	
						Shortleaf pine------	75	114	
						Sweetgum----------	80	86	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
LeB2---------- Lexington	Slight	Slight	Slight	Slight	Moderate	Southern red oak---- Cherrybark oak------ Loblolly pine------- Shortleaf pine------ Sweetgum---------- Yellow-poplar-------	70 80 80 70 89 90	57 86 114 114 100 86	Cherrybark oak, loblolly pine, black walnut.
LeC2, LeC3, LeD3---------- Lexington	Moderate	Slight	Slight	Slight	Moderate	Southern red oak---- Sweetgum----------	70 89	57 100	Loblolly pine, shortleaf pine.
LgC3, LgD3:									
Lexington------	Moderate	Slight	Slight	Slight	Moderate	Southern red oak---- Sweetgum----------	70 89	57 100	Loblolly pine, shortleaf pine.
Providence-----	Moderate	Slight	Slight	Slight	Moderate	Loblolly pine------- Shortleaf pine------ Sweetgum----------	84 64 90	114 100 100	Loblolly pine, shortleaf pine.
LhD:									
Lexington------	Moderate	Slight	Slight	Slight	Moderate	Southern red oak---- Loblolly pine------- Shortleaf pine------ Sweetgum----------	70 80 70 89	57 114 114 100	Loblolly pine, shortleaf pine.
Smithdale------	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Shortleaf pine------	80 69	114 114	Loblolly pine, shortleaf pine.
LhE:									
Lexington------	Severe	Moderate	Slight	Slight	Moderate	Southern red oak---- Sweetgum----------	70 89	57 100	Loblolly pine, shortleaf pine.
Smithdale------	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine------- Shortleaf pine------	80 69	114 114	Loblolly pine, shortleaf pine.
LkD:									
Lexington------	Moderate	Moderate	Slight	Slight	Moderate	Southern red oak---- Sweetgum----------	70 89	57 100	Loblolly pine, shortleaf pine.
Smithdale------	Slight	Moderate	Slight	Slight	Slight	Loblolly pine------- Shortleaf pine------	80 69	114 114	Loblolly pine, shortleaf pine.
Gullied land.									
LkE:									
Lexington------	Severe	Moderate	Slight	Slight	Moderate	Southern red oak---- Loblolly pine------- Shortleaf pine------ Sweetgum----------	70 80 70 89	57 114 114 100	Loblolly pine, shortleaf pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
LkE:									
Smithdale	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine, shortleaf pine.
						Shortleaf pine	69	114	
Gullied land.									
LoB2, LoB3 Loring	Slight	Slight	Slight	Moderate	Moderate	Southern red oak	74	57	Cherrybark oak, loblolly pine, black walnut.
						Sweetgum	90	7	
LoC3, LoD3 Loring	Moderate	Slight	Slight	Moderate	Moderate	Southern red oak	74	57	Loblolly pine, shortleaf pine.
						Sweetgum	90	100	
						Loblolly pine	85	114	
LPD:									
Loring	Moderate	Moderate	Slight	Slight	Slight	Southern red oak	74	57	Loblolly pine, shortleaf pine.
						Cherrybark oak	86	100	
						Sweetgum	90	100	
						Loblolly pine	85	114	
Memphis	Moderate	Slight	Slight	Slight	Slight	Loblolly pine	90	124	Loblolly pine, shortleaf pine.
						Cherrybark oak	90	114	
						Sweetgum	90	100	
LPE:									
Loring	Severe	Moderate	Slight	Slight	Slight	Southern red oak	74	57	Loblolly pine, shortleaf pine.
						Cherrybark oak	86	100	
						Sweetgum	90	100	
						Loblolly pine	85	114	
Memphis	Severe	Moderate	Slight	Slight	Slight	Loblolly pine	90	124	Loblolly pine, shortleaf pine.
						Cherrybark oak	90	114	
						Sweetgum	90	100	
MaA, MeB2 Memphis	Slight	Slight	Slight	Slight	Slight	Loblolly pine	90	124	Cherrybark oak, black walnut, loblolly pine.
						Cherrybark oak	90	114	
						Sweetgum	90	100	
MeC3, MeD3 Memphis	Moderate	Slight	Slight	Slight	Slight	Loblolly pine	90	124	Loblolly pine, shortleaf pine.
						Cherrybark oak	90	114	
						Sweetgum	90	100	
MeE3, MeF Memphis	Severe	Moderate	Slight	Slight	Slight	Loblolly pine	90	124	Loblolly pine, shortleaf pine.
						Cherrybark oak	90	114	
						Sweetgum	90	100	
OA:									
Oaklimeter	Slight	Moderate	Severe	Moderate	Moderate	Cherrybark oak	100	143	Cherrybark oak, eastern cottonwood, American sycamore.
						Eastern cottonwood	100	124	
						Green ash	90	57	
						Willow oak	100	100	
						Sweetgum	100	143	
Tichnor	Slight	Moderate	Severe	Severe	Severe	Cherrybark oak	96	143	Cherrybark oak, eastern cottonwood, American sycamore.
						Eastern cottonwood	106	143	
						Sweetgum	100	143	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
Oc Ochlockonee	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Eastern cottonwood Yellow-poplar Sweetgum	100 100 110 90	157 124 124 100	Loblolly pine, eastern cottonwood, American sycamore.
PrB2 Providence	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine Shortleaf pine Sweetgum	84 64 90	114 100 100	Loblolly pine, shortleaf pine.
PrC2, PrC3 Providence	Moderate	Slight	Slight	Moderate	Moderate	Loblolly pine Shortleaf pine Sweetgum	84 64 90	114 100 100	Loblolly pine, shortleaf pine.
Rb Rosebloom	Slight	Moderate	Moderate	Moderate	Severe	Cherrybark oak Green ash Eastern cottonwood Water oak Willow oak Sweetgum	95 95 100 95 90 95	124 57 125 86 86 114	Baldcypress, eastern cottonwood, water tupelo.
Re Rosebloom	Slight	Severe	Moderate	Moderate	Severe	Cherrybark oak Green ash Eastern cottonwood Water oak Willow oak Sweetgum	95 95 100 95 90 95	124 57 124 86 86 114	Baldcypress, water tupelo.
Rf, Rg Rosebloom	Slight	Severe	Severe	Severe	Slight	Baldcypress Water tupelo Black willow	80 --- ---	57 --- ---	Baldcypress, water tupelo.
Rh: Rosebloom	Slight	Severe	Moderate	Moderate	Severe	Cherrybark oak Green ash Eastern cottonwood Water oak Willow oak Sweetgum	95 95 100 95 90 95	124 57 124 86 86 114	American sycamore, eastern cottonwood.
Center	Slight	Moderate	Slight	Slight	Moderate	Eastern cottonwood Water oak Sweetgum Yellow-poplar American sycamore	95 85 90 90 90	114 80 100 86 100	Eastern cottonwood, American sycamore.
Ro Routon	Slight	Moderate	Moderate	Moderate	Moderate	Cherrybark oak Water oak Willow oak Sweetgum White ash	110 90 90 105 90	186 86 86 157 57	Cherrybark oak, eastern cottonwood, American sycamore.
Rs Routon	Slight	Severe	Severe	Moderate	Moderate	Water oak Willow oak Sweetgum Swamp white oak	90 90 105 80	86 86 157 57	Water tupelo, baldcypress.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
Rt:									
Routon	Slight	Moderate	Moderate	Moderate	Moderate	Cherrybark oak	110	186	Cherrybark oak, eastern cottonwood, American sycamore.
						Water oak	90	86	
						Willow oak	90	86	
						Sweetgum	105	157	
						White ash	90	57	
Center	Slight	Moderate	Slight	Slight	Moderate	Eastern cottonwood	95	114	Eastern cottonwood, American sycamore, cherrybark oak.
						Water oak	85	86	
						Sweetgum	90	100	
						Yellow-poplar	90	86	
						American sycamore	90	100	
Ru:									
Routon	Slight	Moderate	Moderate	Moderate	Moderate	Cherrybark oak	110	186	Cherrybark oak, eastern cottonwood, American sycamore.
						Water oak	90	86	
						White oak	80	57	
						Willow oak	90	86	
						Sweetgum	105	157	
						White ash	90	57	
Dubbs	Slight	Slight	Slight	Slight	Slight	Cherrybark oak	100	143	Eastern cottonwood, cherrybark oak, American sycamore.
						Eastern cottonwood	100	124	
						Green ash	80	57	
						Sweetgum	95	114	
						Water oak	90	86	
						Willow oak	95	86	
SmE3, SmF Smithdale	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	80	114	Loblolly pine, shortleaf pine.
						Shortleaf pine	69	114	

* Volume is the yield in cubic feet per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

TABLE 8.--RECREATIONAL DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Ad Adler	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Slight.
Ca Calloway	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.
Ce Center	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.
Co Collins	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Slight.
Ct Convent	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Cv Convent	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: wetness.
Db Dubbs	Severe: flooding.	Slight	Moderate: slope, flooding.	Slight.
DuB2 Dubbs	Slight	Slight	Moderate: slope.	Slight.
GrB2, GrB3 Grenada	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.
LeB2 Lexington	Slight	Slight	Moderate: slope.	Slight.
LeC2, LeC3 Lexington	Slight	Slight	Severe: slope.	Severe: erodes easily.
LeD3 Lexington	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.
LgC3: Lexington	Slight	Slight	Severe: slope.	Severe: erodes easily.
Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.
LgD3: Lexington	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
LgD3:				
Providence	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.
LhD:				
Lexington	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.
Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
LhE:				
Lexington	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
LkD:				
Lexington	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.
Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Gullied land.				
LkE:				
Lexington	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Gullied land.				
LoB2, LoB3 Loring	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight.
LoC3 Loring	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Slight.
LoD3 Loring	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.
LPD:				
Loring	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.
Memphis	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
LPE:				
Loring	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.
Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.
MaA---Memphis	Slight	Slight	Slight	Severe: erodes easily.
MeB2---Memphis	Slight	Slight	Moderate: slope.	Severe: erodes easily.
MeC3---Memphis	Slight	Slight	Severe: slope.	Severe: erodes easily.
MeD3---Memphis	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.
MeE3---Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.
MeF---Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.
OA:				
Oaklimeter	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.
Tichnor	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Oc---Ochlockonee	Severe: flooding.	Slight	Moderate: flooding.	Slight.
PrB2---Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Slight.
PrC2, PrC3---Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.
Rb---Rosebloom	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Re---Rosebloom	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Rf, Rg---Rosebloom	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Rh:				
Rosebloom	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Center	Severe: flooding, wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.
Ro	Severe:	Severe:	Severe:	Severe:
Routon	wetness.	wetness.	wetness.	wetness.
Rs	Severe:	Severe:	Severe:	Severe:
Routon	ponding.	ponding.	ponding.	ponding.
Rt:				
Routon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Center	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.
Ru:				
Routon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Dubbs	Slight	Slight	Slight	Slight.
SmE3	Severe:	Severe:	Severe:	Moderate:
Smithdale	slope.	slope.	slope.	slope.
SmF	Severe:	Severe:	Severe:	Severe:
Smithdale	slope.	slope.	slope.	slope.
UD.				
Udorthents				

TABLE 9.--WILDLIFE HABITAT

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Ad---- Adler	Good	Good	Good	Good	Fair	Poor	Poor	Good	Good	Poor.
Ca---- Calloway	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Ce---- Center	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Co---- Collins	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ct---- Convent	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Cv---- Convent	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair	Good	Fair.
Db---- Dubbs	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
DuB2---- Dubbs	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
GrB2, GrB3---- Grenada	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LeB2---- Lexington	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LeC2, LeC3, LeD3--- Lexington	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LgC3, LgD3:										
Lexington----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Providence----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LhD:										
Lexington----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Smithdale----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LhE:										
Lexington----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Smithdale----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
LkD:										
Lexington	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Smithdale	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Gullied land.										
LkE:										
Lexington	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Smithdale	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Gullied land.										
LoB2, LoB3 Loring	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LoC3, LoD3 Loring	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LPD:										
Loring	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Memphis	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
LPE:										
Loring	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Memphis	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MaA, MeB2 Memphis	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
MeC3, MeD3 Memphis	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MeE3 Memphis	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MeF Memphis	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
OA:										
Oaklimeter	Poor	Fair	Good	Good	Poor	Poor	Poor	Fair	Good	Poor.
Tichnor	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
Oc Ochlockonee	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PrB2 Providence	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
PrC2, PrC3--------- Providence	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Rb----------------- Rosebloom	Poor	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good.
Re----------------- Rosebloom	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
Rf, Rg------------- Rosebloom	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Rh:										
Rosebloom----------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
Center------------	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ro----------------- Routon	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
Rs----------------- Routon	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Rt:										
Routon------------	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
Center------------	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ru:										
Routon------------	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
Dubbs-------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SmE3--------------- Smithdale	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
SmF---------------- Smithdale	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
UD. Udorthents										

TABLE 10.--BUILDING SITE DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ad Adler	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Ca Calloway	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
Ce Center	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
Co Collins	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Ct Convent	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Moderate: wetness.
Cv Convent	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Db Dubbs	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Moderate: flooding.
DuB2 Dubbs	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
GrB2, GrB3 Grenada	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
LeB2 Lexington	Severe: cutbanks cave.	Slight	Slight	Slight	Severe: low strength.	Slight.
LeC2, LeC3 Lexington	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Severe: low strength.	Slight.
LeD3 Lexington	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
LgC3: Lexington	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Severe: low strength.	Slight.
Providence	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: low strength.	Moderate: wetness.
LgD3: Lexington	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
LgD3:						
Providence	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: wetness, slope.
LhD:						
Lexington	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
LhE:						
Lexington	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
LkD:						
Lexington	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
Gullied land.						
LkE:						
Lexington	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Gullied land.						
LoB2, LoB3 Loring	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Slight.
LoC3 Loring	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: low strength.	Slight.
LoD3 Loring	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: slope.
LPD:						
Loring	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: slope.
Memphis	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
LPE:						
Loring	Severe: wetness, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
MaA, MeB2 Memphis	Slight	Slight	Slight	Slight	Severe: low strength.	Slight.
MeC3 Memphis	Slight	Slight	Slight	Moderate: slope.	Severe: low strength.	Slight.
MeD3 Memphis	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
MeE3, MeF Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
OA:						
Oaklimeter	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Tichnor	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Oc Ochlockonee	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
PrB2 Providence	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: low strength.	Moderate: wetness.
PrC2, PrC3 Providence	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: low strength.	Moderate: wetness.
Rb Rosebloom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
Re Rosebloom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Rf, Rg Rosebloom	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, ponding, flooding.	Severe: ponding, flooding.
Rh:						
Rosebloom	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Rh:						
Center	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Moderate: wetness, flooding.
Ro Routon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Rs Routon	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
Rt:						
Routon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Center	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
Ru:						
Routon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Dubbs	Slight	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
SmE3 Smithdale	Severe: slope, cutbanks, cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
SmF Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
UD. Udorthents						

TABLE 11.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ad Adler	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
Ca Calloway	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ce Center	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Co Collins	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
Ct Convent	Severe: wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
Cv Convent	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
Db Dubbs	Severe: flooding.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding.	Fair: too clayey.
DuB2 Dubbs	Slight	Severe: seepage.	Severe: seepage.	Slight	Fair: too clayey.
GrB2, GrB3 Grenada	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
LeB2, LeC2, LeC3 Lexington	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
LeD3 Lexington	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
LgC3: Lexington	Moderate: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
Providence	Severe: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
LgD3: Lexington	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LgD3:					
Providence	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope, wetness.
LhD:					
Lexington	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
LhE:					
Lexington	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
LkD:					
Lexington	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
Gullied land.					
LkE:					
Lexington	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Gullied land.					
LoB2, LoB3, LoC3 Loring	Severe: wetness, percs slowly.	Moderate: slope.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
LoD3 Loring	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: wetness, slope.
LPD:					
Loring	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: wetness, slope.
Memphis	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LPE:					
Loring	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
MaA Memphis	Slight	Moderate: seepage.	Slight	Slight	Good.
MeB2, MeC3 Memphis	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
MeD3 Memphis	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
MeE3, MeF Memphis	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
OA:					
Oaklimeter	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
Tichnor	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Oc Ochlockonee	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: wetness.
PrB2, PrC2, PrC3 Providence	Severe: wetness, percs slowly.	Moderate: slope, wetness.	Moderate: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
Rb Rosebloom	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Re Rosebloom	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Rf, Rg Rosebloom	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Poor: ponding.
Rh:					
Rosebloom	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Center	Severe: flooding, wetness, percs slowly.	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ro Routon	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Rs Routon	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
Rt: Routon	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Center	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ru: Routon	Severe: wetness, percs slowly.	Moderate: seepage.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Dubbs	Slight	Severe: seepage.	Severe: seepage.	Slight	Fair: too clayey.
SmE3, SmF Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
UD. Udorthents					

TABLE 12.--CONSTRUCTION MATERIALS

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Ad Adler	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ca Calloway	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ce Center	Fair: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Co Collins	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ct, Cv Convent	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Db, DuB2 Dubbs	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
GrB2, GrB3 Grenada	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LeB2, LeC2, LeC3 Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
LeD3 Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
LgC3: Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
Providence	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
LgD3: Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Providence	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
LhD: Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
LhE: Lexington	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
LhE:				
Smithdale	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
LkD:				
Lexington	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Smithdale	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
Gullied land.				
LkE:				
Lexington	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Smithdale	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Gullied land.				
LoB2, LoB3, LoC3---- Loring	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
LoD3---- Loring	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
LPD:				
Loring	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
Memphis	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
LPE:				
Loring	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Memphis	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MaA, MeB2, MeC3---- Memphis	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
MeD3---- Memphis	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
MeE3---- Memphis	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MeF---- Memphis	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
OA:				
Oaklimeter	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
OA:				
Tichnor	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Oc	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
Ochlockonee				
PrB2, PrC2, PrC3	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Providence				
Rb, Re, Rf, Rg	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Rosebloom				
Rh:				
Rosebloom	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Center	Fair: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ro, Rs	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Routon				
Rt:				
Routon	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Center	Fair: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Ru:				
Routon	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Dubbs	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
SmE3	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Smithdale				
SmF	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Smithdale				
UD.				
Udorthents				

TABLE 13.--WATER MANAGEMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
Ad---- Adler	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Flooding----	Erodes easily, wetness.	Erodes easily.
Ca---- Calloway	Moderate: seepage.	Severe: thin layer.	Severe: no water.	Percs slowly---	Erodes easily, wetness, rooting depth.	Wetness, erodes easily, rooting depth.
Ce---- Center	Slight---	Severe: piping, wetness.	Severe: slow refill.	Favorable---	Erodes easily, wetness.	Wetness, erodes easily.
Co---- Collins	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Flooding----	Erodes easily, wetness.	Erodes easily.
Ct---- Convent	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable---	Erodes easily, wetness.	Erodes easily.
Cv---- Convent	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding----	Erodes easily, wetness.	Erodes easily.
Db---- Dubbs	Severe: seepage.	Moderate: thin layer.	Moderate: deep to water, slow refill.	Deep to water	Erodes easily	Erodes easily.
DuB2---- Dubbs	Severe: seepage.	Moderate: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
GrB2, GrB3---- Grenada	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
LeB2, LeC2, LeC3-- Lexington	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
LeD3---- Lexington	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
LgC3: Lexington----	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
Providence----	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----	Erodes easily, wetness.	Erodes easily, rooting depth.
LgD3: Lexington----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
LgD3:						
Providence	Severe: slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
LhD, LhE:						
Lexington	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope	Slope.
LkD, LkE:						
Lexington	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope	Slope.
Gullied land.						
LoB2, LoB3, LoC3-- Loring	Moderate: seepage, slope.	Moderate: piping, wetness.	Severe: no water.	Slope, percs slowly.	Erodes easily, wetness, rooting depth.	Erodes easily, rooting depth.
LoD3-- Loring	Severe: slope.	Moderate: piping, wetness.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
LPD, LPE:						
Loring	Severe: slope.	Moderate: piping, wetness.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
Memphis	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
MaA-- Memphis	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MeB2, MeC3-- Memphis	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MeD3, MeE3, MeF-- Memphis	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
OA:						
Oaklimeter	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding	Erodes easily, wetness.	Erodes easily.
Tichnor	Slight	Severe: piping, wetness.	Severe: no water.	Percs slowly, flooding.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
Oc---------- Ochlockonee	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Favorable------	Favorable.
PrB2, PrC2, PrC3-- Providence	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----------	Erodes easily, wetness.	Erodes easily, rooting depth.
Rb---------- Rosebloom	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Favorable------	Erodes easily, wetness.	Wetness, erodes easily.
Re---------- Rosebloom	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding-------	Erodes easily, wetness.	Wetness, erodes easily.
Rf, Rg---------- Rosebloom	Moderate: seepage.	Severe: ponding.	Moderate: slow refill.	Ponding, flooding.	Erodes easily, ponding.	Wetness, erodes easily.
Rh:						
Rosebloom--------	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding-------	Erodes easily, wetness.	Wetness, erodes easily.
Center----------	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Flooding-------	Erodes easily, wetness.	Wetness, erodes easily.
Ro---------- Routon	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Percs slowly---	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Rs---------- Routon	Slight---------	Severe: piping, ponding.	Severe: slow refill.	Ponding, percs slowly.	Erodes easily, ponding, percs slowly.	Wetness, erodes easily, percs slowly.
Rt:						
Routon----------	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Percs slowly---	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Center----------	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Favorable------	Erodes easily, wetness.	Wetness, erodes easily.
Ru:						
Routon----------	Slight---------	Severe: piping, wetness.	Severe: slow refill.	Percs slowly---	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Dubbs----------	Severe: seepage.	Moderate: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
SmE3, SmF--------- Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope.
UD. Udorthents						

TABLE 14.--ENGINEERING INDEX PROPERTIES

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Ad	0-4	Silt loam	ML, CL-ML	A-4	100	100	100	95-100	<28	NP-7
Adler	4-60	Silt loam, silt	ML, CL, CL-ML	A-4	100	100	95-100	90-100	<30	NP-10
Ca	0-30	Silt loam	CL-ML, CL	A-4, A-6	100	100	100	90-100	25-35	5-15
Calloway	30-60	Silt loam, silty clay loam.	CL	A-6	100	100	100	90-95	30-40	12-20
Ce	0-6	Silt loam	ML, CL, CL-ML	A-4, A-6	100	95-100	90-100	80-100	<30	3-11
Center	6-55	Silty clay loam, silt loam.	CL, ML	A-6, A-4	100	95-100	95-100	90-100	28-40	8-16
	55-60									
Co	0-5	Silt loam	ML, CL, CL-ML	A-4	100	100	85-100	70-90	<30	NP-8
Collins	5-60	Silt loam, silt	ML, CL-ML	A-4	100	100	100	90-100	<35	NP-10
Ct, Cv	0-11	Silt loam	ML, CL-ML	A-4	100	100	95-100	85-100	<27	NP-7
Convent	11-60	Silt loam, very fine sandy loam, loam.	ML, CL-ML	A-4	100	100	95-100	75-100	<27	NP-7
Db	0-8	Silt loam	ML, CL-ML, CL	A-4	100	100	100	60-90	20-35	3-10
Dubbs	8-55	Silty clay loam, silt loam, loam.	CL	A-6, A-7	100	100	100	85-100	35-50	15-25
	55-60	Loam, silt loam, sandy loam.	ML, CL-ML, CL	A-4, A-6	100	100	85-95	55-90	20-35	3-14
DuB2	0-7	Silt loam	ML, CL-ML, CL	A-4	100	100	100	60-90	20-35	3-10
Dubbs	7-60	Silty clay loam, clay loam, silt loam.	CL	A-6, A-7	100	100	100	85-100	35-50	15-25
GrB2	0-9	Silt loam	ML, CL-ML	A-4	100	100	95-100	90-100	25-31	4-7
Grenada	9-18	Silt loam, silty clay loam.	CL	A-6, A-4	100	100	95-100	90-100	27-40	8-19
	18-22	Silt loam	CL-ML, CL	A-4	100	100	95-100	90-100	20-30	5-10
	22-60	Silt loam, silty clay loam.	CL, CL-ML	A-6, A-7, A-4	100	100	95-100	90-100	25-45	5-24
GrB3	0-4	Silt loam	ML, CL-ML	A-4	100	100	95-100	90-100	25-31	4-7
Grenada	4-17	Silt loam, silty clay loam.	CL	A-6, A-4	100	100	95-100	90-100	27-40	8-19
	17-60	Silt loam, silty clay loam.	CL, CL-ML	A-6, A-7, A-4	100	100	95-100	90-100	25-45	5-24
LeB2, LeC2	0-6	Silt loam	ML, CL, CL-ML	A-4, A-6, A-7	100	95-100	90-100	70-100	25-42	5-16
Lexington	6-48	Silty clay loam, silt loam.	CL	A-6, A-7	100	95-100	90-100	75-100	27-45	11-25
	48-60	Clay loam, loam, sandy clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	50-85	20-65	22-35	5-15

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
LeC3, LeD3------- Lexington	0-5	Silt loam---------	ML, CL, CL-ML	A-4, A-6, A-7	100	95-100	90-100	70-100	25-42	5-16
	5-50	Silty clay loam, silt loam.	CL	A-6, A-7	100	95-100	90-100	75-100	27-45	11-25
	50-60	Clay loam, loam, sandy clay loam.	SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	50-85	20-65	22-35	5-15
LgC3, LgD3: Lexington--------	0-5	Silt loam---------	ML, CL, CL-ML	A-4, A-6, A-7	100	95-100	90-100	70-100	25-42	5-16
	5-50	Silty clay loam, silt loam.	CL	A-6, A-7	100	95-100	90-100	75-100	27-45	11-25
	50-60	Clay loam, loam, sandy clay loam.	SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	50-85	20-65	22-35	5-15
Providence------	0-4	Silt loam---------	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	4-18	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	18-46	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	46-60	Sandy loam, sandy clay loam, loam.	SM, SC, CL, ML	A-2, A-4	100	95-100	60-85	30-80	<30	NP-10
LhD, LhE: Lexington--------	0-5	Silt loam---------	ML, CL, CL-ML	A-4, A-6, A-7	100	95-100	90-100	70-100	25-42	5-16
	5-44	Silty clay loam, silt loam.	CL	A-6, A-7	100	95-100	90-100	75-100	27-45	11-25
	44-60	Sandy clay loam, loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	50-85	20-65	22-35	5-15
Smithdale--------	0-10	Fine sandy loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	10-34	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	34-60	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
LkD, LkE: Lexington--------	0-5	Silt loam---------	ML, CL, CL-ML	A-4, A-6, A-7	100	95-100	90-100	70-100	25-42	5-16
	5-50	Silty clay loam, silt loam.	CL	A-6, A-7	100	95-100	90-100	75-100	27-45	11-25
	50-60	Clay loam, loam	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	100	95-100	50-85	20-65	22-35	5-15
Smithdale--------	0-10	Fine sandy loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	10-34	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	34-60	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
Gullied land.										

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
LoB2---------- Loring	0-6	Silt loam--------	ML, CL-ML, CL	A-4, A-6	100	100	95-100	90-100	<35	NP-15
	6-26	Silt loam, silty clay loam.	CL, ML	A-6, A-7, A-4	100	100	95-100	90-100	32-48	10-20
	26-57	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	57-60	Silt loam--------	CL, ML	A-4, A-6	100	100	95-100	70-100	28-40	7-16
LoB3, LoC3, LoD3- Loring	0-4	Silt loam--------	ML, CL-ML, CL	A-4, A-6	100	100	95-100	90-100	<35	NP-15
	4-14	Silt loam, silty clay loam.	CL, ML	A-6, A-7, A-4	100	100	95-100	90-100	32-48	10-20
	14-44	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	44-60	Silt loam--------	CL, ML	A-4, A-6	100	100	95-100	70-100	28-40	7-16
LPD, LpE:										
Loring----------	0-4	Silt loam--------	ML, CL-ML, CL	A-4, A-6	100	100	95-100	90-100	<35	NP-15
	4-14	Silt loam, silty clay loam.	CL, ML	A-6, A-7, A-4	100	100	95-100	90-100	32-48	10-20
	14-44	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	44-60	Silt loam--------	CL, ML	A-4, A-6	100	100	95-100	70-100	28-40	7-16
Memphis---------	0-4	Silt loam--------	ML, CL-ML, CL	A-4	100	100	100	90-100	<30	NP-10
	4-35	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	35-60	Silt loam--------	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MaA---------- Memphis	0-9	Silt loam--------	ML, CL-ML, CL	A-4	100	100	100	90-100	<30	NP-10
	9-20	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	20-60	Silt loam--------	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MeB2---------- Memphis	0-6	Silt loam--------	ML, CL-ML, CL	A-4	100	100	100	90-100	<30	NP-10
	6-41	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	41-60	Silt loam--------	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MeC3, MeD3, MeE3- Memphis	0-4	Silt loam--------	ML, CL-ML, CL	A-4	100	100	100	90-100	<30	NP-10
	4-35	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	35-60	Silt loam--------	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MeF---------- Memphis	0-14	Silt loam--------	ML, CL-ML, CL	A-4	100	100	100	90-100	<30	NP-10
	14-35	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	35-60	Silt loam--------	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
OA:										
Oaklimeter	0-7	Silt loam	ML, CL, CL-ML	A-4	100	100	90-100	70-90	<30	NP-8
	7-46	Very fine sandy loam, silt loam, loam.	ML, CL, CL-ML	A-4	100	100	85-95	60-85	<30	NP-8
	46-60	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4	100	100	90-100	90-100	<30	NP-10
Tichnor	0-36	Silt loam	ML, CL-ML, CL	A-4, A-6	100	100	95-100	70-100	<35	NP-15
	36-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6, A-7	100	100	90-100	70-95	24-45	7-25
Oc Ochlockonee	0-6	Fine sandy loam	SM, ML, SM-SC, CL-ML	A-4, A-2	100	95-100	65-90	40-70	<26	NP-5
	6-19	Fine sandy loam, sandy loam, silt loam.	SM, ML, SC, CL	A-4	100	95-100	95-100	36-75	<32	NP-9
	19-60	Loamy sand, sandy loam, silt loam.	SM, ML, CL, SC	A-4, A-2	100	95-100	85-99	13-80	<32	NP-9
PrB2, PrC2 Providence	0-7	Silt loam	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	7-30	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	30-42	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	42-60	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	100	95-100	70-95	40-80	20-35	8-18
PrC3 Providence	0-4	Silt loam	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	4-18	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	18-46	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	46-60	Sandy loam, sandy clay loam, loam.	SM, SC, CL, ML	A-2, A-4	100	95-100	60-85	30-80	<30	NP-10
Rb, Re, Rf, Rg Rosebloom	0-9	Silt loam	CL, CL-ML	A-4, A-6	100	100	90-100	80-95	<30	NP-10
	9-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	100	100	90-100	80-95	28-40	9-20
Rh:										
Rosebloom	0-9	Silt loam	CL	A-4, A-6	100	100	90-100	80-95	<30	NP-10
	9-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	100	95-100	90-100	80-95	28-40	9-20
Center	0-6	Silt loam	ML, CL	A-4, A-6	100	95-100	90-100	80-100	<30	3-11
	6-40	Silt loam, silty clay loam.	ML, CL	A-4, A-6	100	95-100	95-100	90-100	28-40	8-16
	40-60	Silt loam	ML, CL, CL-ML	A-4, A-6	100	95-100	90-100	80-100	15-30	3-11
Ro, Rs Routon	0-18	Silt loam	ML, CL, CL-ML	A-4, A-6	100	100	90-100	85-95	16-32	3-12
	18-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	100	100	90-100	90-95	20-40	5-17

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Rt:										
Routon	0-18	Silt loam	ML, CL, CL-ML	A-4, A-6	100	100	90-100	85-95	16-32	3-12
	18-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	100	100	90-100	90-95	20-40	5-17
Center	0-6	Silt loam	ML, CL, CL-ML	A-4, A-6	100	95-100	90-100	80-100	<30	3-11
	6-55	Silt loam, silty clay loam.	ML, CL	A-4, A-6	100	95-100	95-100	90-100	28-40	8-16
	55-60	Silt loam	ML, CL, CL-ML	A-4, A-6	100	95-100	90-100	80-100	15-30	3-11
Ru:										
Routon	0-18	Silt loam	ML, CL, CL-ML	A-4, A-6	100	100	90-100	85-95	16-32	3-12
	18-60	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	100	100	90-100	90-95	20-40	5-17
Dubbs	0-7	Silt loam	ML, CL-ML, CL	A-4	100	100	100	60-90	20-35	3-10
	7-60	Silty clay loam, clay loam, silt loam.	CL	A-6, A-7	100	100	100	85-100	35-50	15-25
SmE3	0-6	Loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
Smithdale	6-30	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	30-60	Loamy sand, sandy loam.	SM, ML, SC, SC-SM	A-4, A-2	100	85-100	50-70	15-40	<20	NP-5
SmF	0-10	Fine sandy loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
Smithdale	10-42	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	42-60	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
UD.										
Udorthents										

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
								K	T
	In	Pct	g/cc	In/hr	In/in	pH			
Ad	0-4	10-25	1.50-1.55	0.6-2.0	0.20-0.23	5.6-7.8	Low	0.43	5
Adler	4-60	5-18	1.50-1.55	0.6-2.0	0.20-0.23	5.1-7.8	Low	0.43	
Ca	0-30	10-27	1.40-1.55	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
Calloway	30-60	10-32	1.35-1.55	0.06-0.2	0.09-0.12	4.5-6.0	Low	0.43	
Ce	0-6	12-24	1.35-1.50	0.6-2.0	0.18-0.22	5.1-6.5	Low	0.49	5
Center	6-55	18-32	1.30-1.50	0.2-0.6	0.16-0.20	5.1-6.5	Low	0.43	
	55-60	15-25	1.30-1.50	0.2-0.6	0.16-0.20	5.6-6.5	Low	0.49	
Co	0-5	7-16	1.40-1.50	0.6-2.0	0.16-0.24	4.5-5.5	Low	0.43	5
Collins	5-60	5-18	1.40-1.50	0.6-2.0	0.20-0.24	4.5-5.5	Low	0.43	
Ct, Cv	0-11	0-18	1.30-1.65	0.6-2.0	0.18-0.23	5.6-8.4	Low	0.43	5
Convent	11-60	0-18	1.30-1.65	0.6-2.0	0.20-0.23	5.6-8.4	Low	0.37	
Db	0-8	5-18	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.37	5
Dubbs	8-55	20-35	1.45-1.55	0.6-2.0	0.18-0.22	4.5-6.0	Moderate	0.37	
	55-60	10-25	1.40-1.50	2.0-6.0	0.20-0.22	4.5-6.0	Low	0.37	
DuB2	0-7	5-18	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.37	5
Dubbs	7-60	20-35	1.45-1.55	0.6-2.0	0.18-0.22	4.5-6.0	Moderate	0.37	
GrB2	0-9	12-16	1.40-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
Grenada	9-18	18-30	1.40-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.43	
	18-22	12-16	1.35-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
	22-60	15-32	1.45-1.60	0.06-0.2	0.10-0.12	4.5-6.0	Low	0.37	
GrB3	0-4	12-16	1.40-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
Grenada	4-17	18-30	1.40-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.43	
	17-60	15-32	1.45-1.60	0.06-0.2	0.10-0.12	4.5-6.0	Low	0.37	
LeB2, LeC2	0-6	12-30	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3
Lexington	6-48	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43	
	48-60	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24	
LeC3, LeD3	0-5	12-30	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3
Lexington	5-50	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43	
	50-60	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24	
LgC3, LgD3:									
Lexington	0-5	12-30	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3
	5-50	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43	
	50-60	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24	
Providence	0-4	5-12	1.30-1.40	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	3
	4-18	18-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	18-46	20-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low	0.32	
	46-60	10-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low	0.32	
LhD, LhE:									
Lexington	0-5	12-30	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3
	5-44	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43	
	44-60	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24	

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
								K	T
	In	Pct	g/cc	In/hr	In/in	pH			
LhD, LhE:									
Smithdale	0-10	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5
	10-34	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24	
	34-60	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	
LkD, LkE:									
Lexington	0-5	12-30	1.30-1.50	0.6-2.0	0.17-0.22	4.5-6.0	Low	0.49	3
	5-50	20-33	1.40-1.55	0.6-2.0	0.16-0.21	4.5-6.0	Low	0.43	
	50-60	15-29	1.30-1.50	2.0-6.0	0.06-0.12	4.5-6.0	Low	0.24	
Smithdale	0-10	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5
	10-34	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24	
	34-60	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	
Gullied land.									
LoB2	0-6	8-18	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
Loring	6-26	18-32	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	26-57	15-30	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	Low	0.43	
	57-60	10-25	1.30-1.60	0.2-2.0	0.06-0.13	4.5-6.5	Low	0.43	
LoB3, LoC3, LoD3-	0-4	8-18	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
Loring	4-14	18-32	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	14-44	15-30	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	Low	0.43	
	44-60	10-25	1.30-1.60	0.2-2.0	0.06-0.13	4.5-6.5	Low	0.43	
LPD, LPE:									
Loring	0-4	8-18	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	3
	4-14	18-32	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	14-44	15-30	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	Low	0.43	
	44-60	10-25	1.30-1.60	0.2-2.0	0.06-0.13	4.5-6.5	Low	0.43	
Memphis	0-4	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	5
	4-35	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	
	35-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
MaA	0-9	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	5
Memphis	9-20	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	
	20-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
MeB2	0-6	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	5
Memphis	6-41	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	
	41-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
MeC3, MeD3, MeE3-	0-4	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	5
Memphis	4-35	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	
	35-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
MeF	0-14	8-22	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	5
Memphis	14-35	20-35	1.30-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	
	35-60	12-25	1.30-1.50	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.49	
OA:									
Oaklimeter	0-7	10-16	1.40-1.50	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.43	5
	7-46	7-18	1.40-1.50	0.6-2.0	0.15-0.20	4.5-5.5	Low	0.43	
	46-60	7-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-5.5	Low	0.43	
Tichnor	0-36	5-27	1.35-1.50	0.6-2.0	0.16-0.22	4.5-6.0	Low	0.43	5
	36-60	15-40	1.40-1.55	0.06-0.2	0.16-0.22	4.5-6.0	Low	0.37	

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
								K	T
	In	Pct	g/cc	In/hr	In/in	pH			
Oc	0-6	3-18	1.40-1.60	2.0-6.0	0.07-0.14	4.5-6.5	Low	0.20	5
Ochlockonee	6-19	8-18	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low	0.20	
	19-60	3-18	1.40-1.70	2.0-6.0	0.06-0.12	4.5-5.5	Low	0.17	
PrB2, PrC2	0-7	5-12	1.30-1.40	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	3
Providence	7-30	18-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	30-42	20-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low	0.32	
	42-60	12-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low	0.32	
PrC3	0-4	5-12	1.30-1.40	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.49	3
Providence	4-18	18-30	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	18-46	20-30	1.40-1.60	0.2-0.6	0.08-0.10	4.5-6.0	Low	0.32	
	46-60	10-27	1.40-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low	0.32	
Rb, Re, Rf, Rg	0-9	18-25	1.40-1.55	0.6-2.0	0.2-0.22	4.5-5.5	Low	0.43	5
Rosebloom	9-60	20-35	1.40-1.55	0.6-2.0	0.18-0.21	4.5-5.5	Low	0.37	
Rh:									
Rosebloom	0-9	18-25	1.40-1.55	0.6-2.0	0.2-0.22	4.5-5.5	Low	0.43	5
	9-60	20-35	1.40-1.55	0.6-2.0	0.18-0.21	4.5-5.5	Low	0.37	
Center	0-6	12-24	1.35-1.50	0.6-2.0	0.18-0.22	5.1-6.5	Low	0.49	5
	6-40	18-32	1.30-1.50	0.2-0.6	0.16-0.20	5.6-7.8	Low	0.49	
	40-60	15-25	1.30-1.50	0.2-0.6	0.16-0.20	5.6-6.5	Low	0.49	
Ro, Rs	0-18	15-25	1.40-1.55	0.6-2.0	0.20-0.24	4.5-6.5	Low	0.49	5
Routon	18-60	20-35	1.35-1.50	0.06-0.2	0.18-0.22	4.5-6.5	Low	0.49	
Rt:									
Routon	0-18	15-25	1.40-1.55	0.6-2.0	0.20-0.24	4.5-6.5	Low	0.49	5
	18-60	20-35	1.35-1.50	0.06-0.2	0.18-0.22	4.5-6.5	Low	0.49	
Center	0-6	12-24	1.35-1.50	0.6-2.0	0.18-0.22	5.1-6.5	Low	0.49	5
	6-55	15-25	1.30-1.50	0.2-0.6	0.16-0.20	5.6-6.5	Low	0.49	
	55-60	18-32	1.30-1.50	0.2-0.6	0.16-0.20	5.6-6.5	Low	0.43	
Ru:									
Routon	0-18	15-25	1.40-1.55	0.6-2.0	0.20-0.24	4.5-6.5	Low	0.49	5
	18-60	20-35	1.35-1.50	0.06-0.2	0.18-0.22	4.5-6.5	Low	0.49	
Dubbs	0-7	5-18	1.40-1.50	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.37	5
	7-60	20-35	1.45-1.55	0.6-2.0	0.18-0.22	4.5-6.0	Moderate	0.37	
SmE3	0-6	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5
Smithdale	6-30	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24	
	30-60	9-20	1.40-1.55	2.0-6.0	0.10-0.12	4.5-5.5	Low	0.17	
SmF	0-10	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	5
Smithdale	10-42	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low	0.24	
	42-60	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low	0.28	
UD.									
Udorthents									

TABLE 16.--SOIL AND WATER FEATURES

("Flooding," "water table," and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
Ad---------- Adler	C	Occasional	Very brief	Jan-Apr	2.0-3.0	Apparent	Jan-Apr	Moderate	Low.
Ca---------- Calloway	C	None---------	---	---	1.0-2.0	Perched	Jan-Apr	High-----	Moderate.
Ce---------- Center	C	None---------	---	---	1.0-2.5	Apparent	Jan-Apr	High-----	Moderate.
Co---------- Collins	C	Occasional	Very brief	Jan-Apr	2.0-3.0	Apparent	Jan-Apr	Moderate	Moderate.
Ct---------- Convent	C	Rare---------	---	---	1.5-3.0	Apparent	Jan-Apr	High-----	Low.
Cv---------- Convent	C	Frequent----	Brief-----	Dec-Apr	1.5-3.0	Apparent	Jan-Apr	High-----	Low.
Db---------- Dubbs	C	Occasional	Brief-----	Jan-Apr	4.0-6.0	Apparent	Jan-Apr	Moderate	Moderate.
DuB2---------- Dubbs	B	None---------	---	---	>6.0	---	---	Moderate	Moderate.
GrB2, GrB3-------- Grenada	C	None---------	---	---	1.5-2.5	Perched	Jan-Apr	Moderate	Moderate.
LeB2, LeC2, LeC3, LeD3---------- Lexington	B	None---------	---	---	>6.0	---	---	Moderate	Moderate.
LgC3, LgD3: Lexington--------	B	None---------	---	---	>6.0	---	---	Moderate	Moderate.
Providence-------	C	None---------	---	---	1.5-3.0	Perched	Jan-Mar	Moderate	Moderate.
LhD, LhE: Lexington--------	B	None---------	---	---	>6.0	---	---	Moderate	Moderate.
Smithdale--------	B	None---------	---	---	>6.0	---	---	Low------	Moderate.
LkD, LkE: Lexington--------	B	None---------	---	---	>6.0	---	---	Moderate	Moderate.
Smithdale--------	B	None---------	---	---	>6.0	---	---	Low------	Moderate.
Gullied land.									
LoB2, LoB3, LoC3, LoD3---------- Loring	C	None---------	---	---	2.0-3.0	Perched	Jan-Mar	Moderate	Moderate.
LPD, LPE: Loring----------	C	None---------	---	---	2.0-3.0	Perched	Jan-Mar	Moderate	Moderate.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
LPD, LpE: Memphis	B	None	---	---	>6.0	---	---	Moderate	Moderate.
MaA, MeB2, MeC3, MeD3, MeE3, MeF--Memphis	B	None	---	---	>6.0	---	---	Moderate	Moderate.
OA: Oaklimeter	C	Frequent	Long	Dec-Apr	1.5-2.5	Apparent	Dec-May	Moderate	High.
Tichnor	D	Frequent	Long	Dec-Apr	0.5-1.5	Perched	Dec-May	High	Moderate.
Oc--Ochlockonee	B	Occasional	Very brief	Dec-Apr	3.0-5.0	Apparent	Jan-Mar	Low	High.
PrB2, PrC2, PrC3--Providence	C	None	---	---	1.5-3.0	Perched	Jan-Mar	Moderate	Moderate.
Rb--Rosebloom	D	Rare	Very brief	Jan-Feb	0-1.0	Apparent	Jan-Apr	High	Moderate.
Re--Rosebloom	D	Frequent	Long	Jan-Apr	0-1.0	Apparent	Jan-Apr	High	Moderate.
Rf--Rosebloom	D	Frequent	Very long	Jan-Apr	+2-1.0	Apparent	Dec-Jun	High	Moderate.
Rg--Rosebloom	D	Frequent	Very long	Jan-Apr	+2-1.0	Apparent	Dec-Sep	High	Moderate.
Rh: Rosebloom	D	Frequent	Long	Jan-Apr	0-1.0	Apparent	Jan-Mar	High	Moderate.
Center	C	Occasional	Brief	Jan-Mar	1.0-2.5	Apparent	Dec-Mar	High	Moderate.
Ro--Routon	D	None	---	---	0-1.0	Apparent	Dec-Apr	High	Moderate.
Rs--Routon	D	None	---	---	+1-1.0	Apparent	Dec-Apr	High	Moderate.
Rt: Routon	D	None	---	---	0-1.0	Apparent	Dec-Apr	High	Moderate.
Center	C	None	---	---	1.0-2.5	Apparent	Dec-Mar	High	Moderate.
Ru: Routon	D	None	---	---	0-1.0	Apparent	Dec-Apr	High	Moderate.
Dubbs	B	None	---	---	>6.0	---	---	Moderate	Moderate.
SmE3, SmF--Smithdale	B	None	---	---	>6.0	---	---	Low	Moderate.
UD. Udorthents									

TABLE 17.--CLASSIFICATION OF THE SOILS

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series)

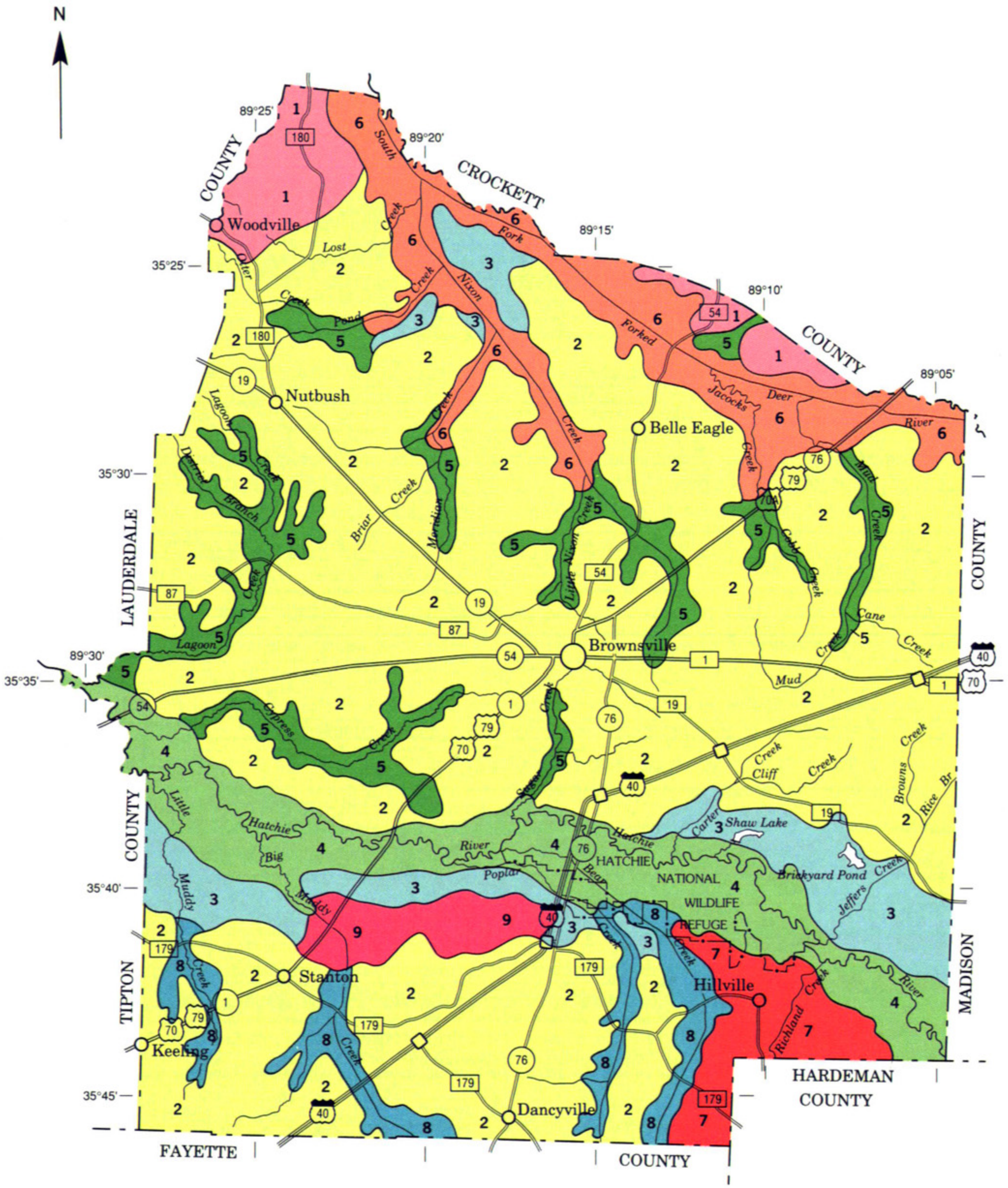
Soil name	Family or higher taxonomic class
Adler	Coarse-silty, mixed, nonacid, thermic Aquic Udifluvents
Calloway	Fine-silty, mixed, thermic Glossaquic Fragiudalfs
Center	Fine-silty, mixed, thermic Aquic Hapludalfs
Collins	Coarse-silty, mixed, acid, thermic Aquic Udifluvents
Convent	Coarse-silty, mixed, nonacid, thermic Aeric Fluvaquents
Dubbs	Fine-silty, mixed, thermic Typic Hapludalfs
Grenada	Fine-silty, mixed, thermic Glossic Fragiudalfs
Lexington	Fine-silty, mixed, thermic Typic Paleudalfs
Loring	Fine-silty, mixed, thermic Typic Fragiudalfs
*Memphis	Fine-silty, mixed, thermic Typic Hapludalfs
Oaklimeter	Coarse-silty, mixed, thermic Fluvaquentic Dystrochrepts
Ochlockonee	Coarse-loamy, siliceous, acid, thermic Typic Udifluvents
Providence	Fine-silty, mixed, thermic Typic Fragiudalfs
Rosebloom	Fine-silty, mixed, acid, thermic Typic Fluvaquents
Routon	Fine-silty, mixed, thermic Typic Ochraqualfs
Smithdale	Fine-loamy, siliceous, thermic Typic Hapludults
Tichnor	Fine-silty, mixed, thermic Typic Ochraqualfs
Udorthents	Typic Udorthents

☆ U.S. GOVERNMENT PRINTING OFFICE : 1995—386-441/20504/SCS

NRCS Accessibility Statement

This document is not accessible by screen-reader software. The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at ServiceDesk-FTC@ftc.usda.gov. For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at http://offices.sc.egov.usda.gov/locator/app.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.



SOIL LEGEND*

1	MEMPHIS-LORING
2	LORING-MEMPHIS-ADLER
3	ROUTON-DUBBS
4	OAKLIMETER-TICHNOR
5	CONVENT-ADLER
6	ROSEBLOOM
7	LEXINGTON-SMITHDALE
8	CONVENT-COLLINS
9	ROUTON

* The units on this legend are described in the text under the heading "General Soil Map Units."

Compiled 1994

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TENNESSEE AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

HAYWOOD COUNTY, TENNESSEE

Scale 1:253,440

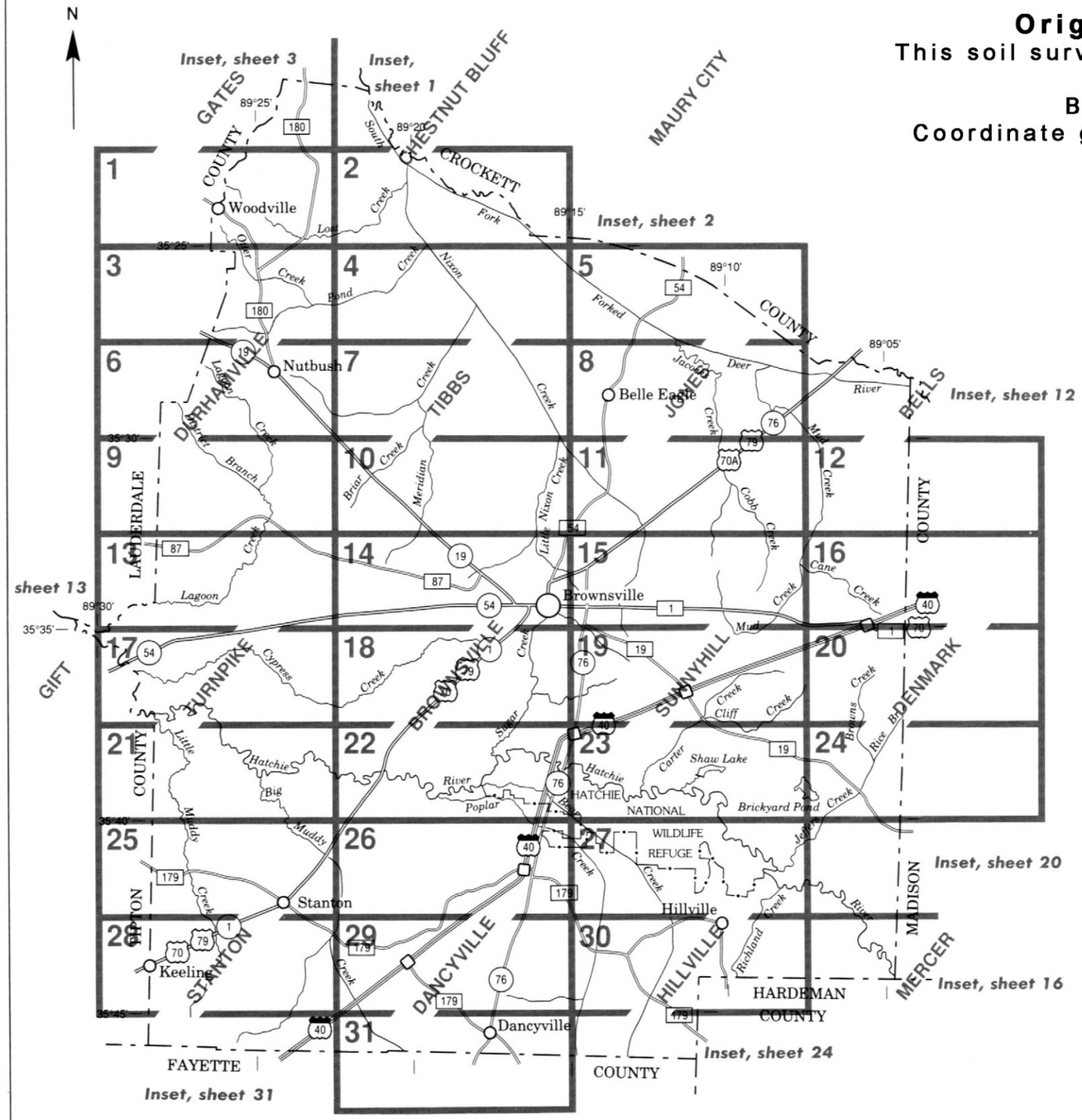
1 0 1 2 3 4 Mi

1 0 4 8 Km

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

Original text from each individual map sheet read:

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies.
Base maps are prepared from 1980 aerial photography.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



INDEX TO MAP SHEETS

HAYWOOD COUNTY, TENNESSEE

Scale 1:253,440

1 0 1 2 3 4 Mi

1 0 4 8 Km

SOIL LEGEND

Soil map symbols and map unit names are alphabetical. Map symbols are letters or a combination of letters and a number. The first, letter, always a capital, is the initial letter of the map unit name or miscellaneous area. The second letter may be lowercase or uppercase. The third letter, if used, is always a capital letter and indicates the class of slope. A final number of 2 following the slope letter indicates that the soil is eroded and 3 that it is severely eroded. Symbols with only two letters, an uppercase and a lowercase letter, indicate nearly level soils. Symbols with only two letters, both capital letters, indicate soils named at categories above the series level or units that have a composition that is more variable than that of others in the survey area.

SYMBOL	NAME
Ad	Adler silt loam, occasionally flooded
Ca	Calloway silt loam
Ce	Center silt loam
Co	Collins silt loam, occasionally flooded
Ct	Convent silt loam, rarely flooded
Cv	Convent silt loam, frequently flooded
Db	Dubbs silt loam, 1 to 3 percent slopes, occasionally flooded
DuB2	Dubbs silt loam, 1 to 5 percent slopes, eroded
GrB2	Grenada silt loam, 1 to 5 percent slopes, eroded
GrB3	Grenada silt loam, 1 to 5 percent slopes, eroded
LeB2	Lexington silt loam, 2 to 5 percent slopes, eroded
LeC2	Lexington silt loam, 5 to 8 percent slopes, eroded
LeC3	Lexington silt loam, 5 to 8 percent slopes, severely eroded
LeD3	Lexington silt loam, 8 to 12 percent slopes, severely eroded
LgC3	Lexington-Providence complex, 5 to 8 percent slopes, severely eroded
LgD3	Lexington-Providence complex, 8 to 12 percent slopes, severely eroded
LhD	Lexington-Smithdale association, 8 to 12 percent slopes
LhE	Lexington-Smithdale association, 12 to 25 percent slopes
LkD	Lexington-Smithdale-Gullied land complex, 5 to 12 percent slopes
LkE	Lexington-Smithdale-Gullied land complex, 12 to 30 percent slopes
LoB2	Loring silt loam, 1 to 5 percent slopes, eroded
LoB3	Loring silt loam, 1 to 5 percent slopes, severely eroded
LoC3	Loring silt loam, 5 to 8 percent slopes, severely eroded
LoD3	Loring silt loam, 8 to 12 percent slopes, severely eroded
LPD	Loring and Memphis soils, 5 to 12 percent slopes, gullied
LPE	Loring and Memphis soils, 12 to 30 percent slopes, gullied
MaA	Memphis silt loam, terrace, 0 to 2 percent slopes
MeB2	Memphis silt loam, 1 to 5 percent slopes, eroded
MeC3	Memphis silt loam, 5 to 8 percent slopes, severely eroded
MeD3	Memphis silt loam, 8 to 12 percent slopes, severely eroded
MeE3	Memphis silt loam, 12 to 20 percent slopes, severely eroded
MeF	Memphis silt loam, 20 to 40 percent slopes
OA	Oaklimeter and Tichnor soils, frequently flooded
Oc	Ochlockonee fine sandy loam, occasionally flooded
PrB2	Providence silt loam, 1 to 5 percent slopes, eroded
PrC2	Providence silt loam, 5 to 8 percent slopes, eroded
PrC3	Providence silt loam, 5 to 8 percent slopes, severely eroded
Rb	Rosebloom silt loam, rarely flooded
Re	Rosebloom silt loam, frequently flooded
Rf	Rosebloom silt loam, depressional, frequently flooded
Rg	Rosebloom silt loam, frequently flooded, ponded
Rh	Rosebloom-Center complex, frequently flooded
Ro	Routon silt loam
Rs	Routon silt loam, ponded
Rt	Routon-Center complex
Ru	Routon-Dubbs complex
SmE3	Smithdale loam, 12 to 25 percent slopes, severely eroded
SmF	Smithdale fine sandy loam, 25 to 35 percent slopes
UD	Udorthents, loamy, steep

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline and neatline
- AD HOC BOUNDARY (label) — Davis Airstrip
- Small airport, airfield, park, oilfield, cemetery, or flood pool — FLOOD POOL LINE
- STATE COORDINATE TICK — 1 890 000 FEET
- LAND DIVISION CORNER (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate — 173
- Federal — 287
- State — 52
- County, farm or ranch — 1283

- RAILROAD
- POWER TRANSMISSION LINE (normally not shown)
- PIPE LINE (normally not shown)
- FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or Small (Named where applicable) — water

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban area) (occupied)
- Church
- School
- Indian mound (label) — Indian Mound
- Located object (label) — Tower
- Tank (label) — Gas
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) — CANAL
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

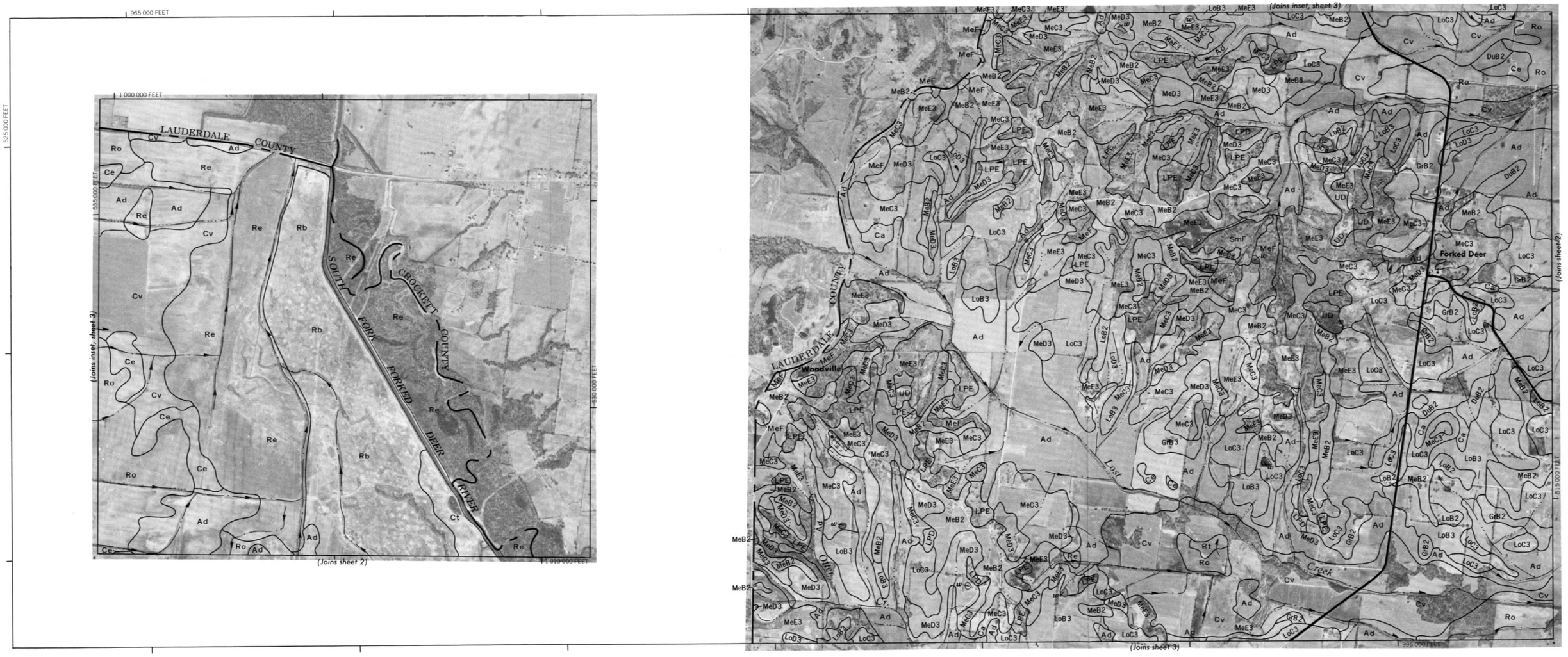
- Perennial — water
- Intermittent — int

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

- SOIL DELINEATIONS AND SYMBOLS — LPD MeD3
- ESCARPMENTS
  - Bedrock (points down slope)
  - Other than bedrock (points down slope)
- SHORT STEEP SLOPE
- GULLY
- DEPRESSION OR SINK
- SOIL SAMPLE (normally not shown) — S
- MISCELLANEOUS
  - Blowout
  - Clay spot
  - Gravelly spot
  - Gumbo, slick or scabby spot (sodic)
  - Dumps and other similar non soil areas
  - Prominent hill or peak
  - Rock outcrop (includes sandstone and shale)
  - Saline spot
  - Sandy spot
  - Severely eroded spot
  - Slide or slip (tips point upslope)
  - Stony spot, very stony spot



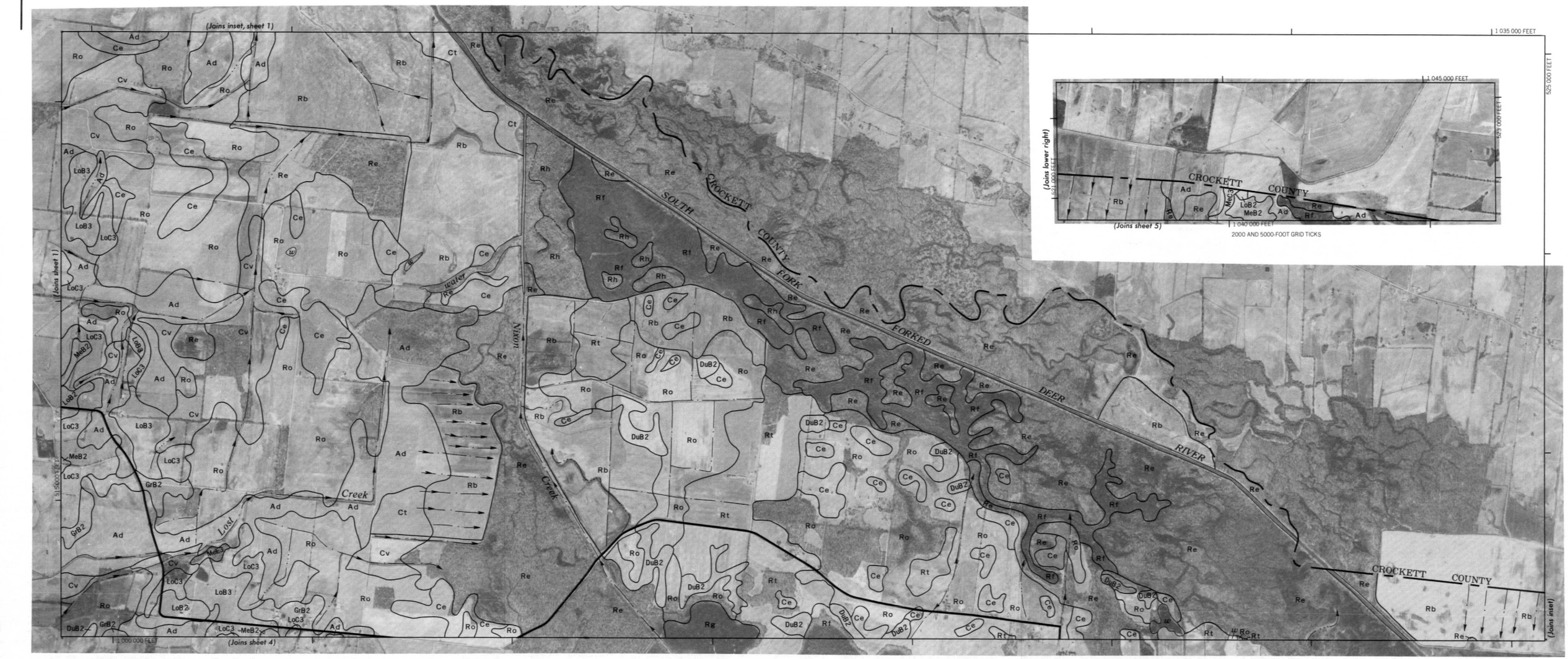
5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

1

N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

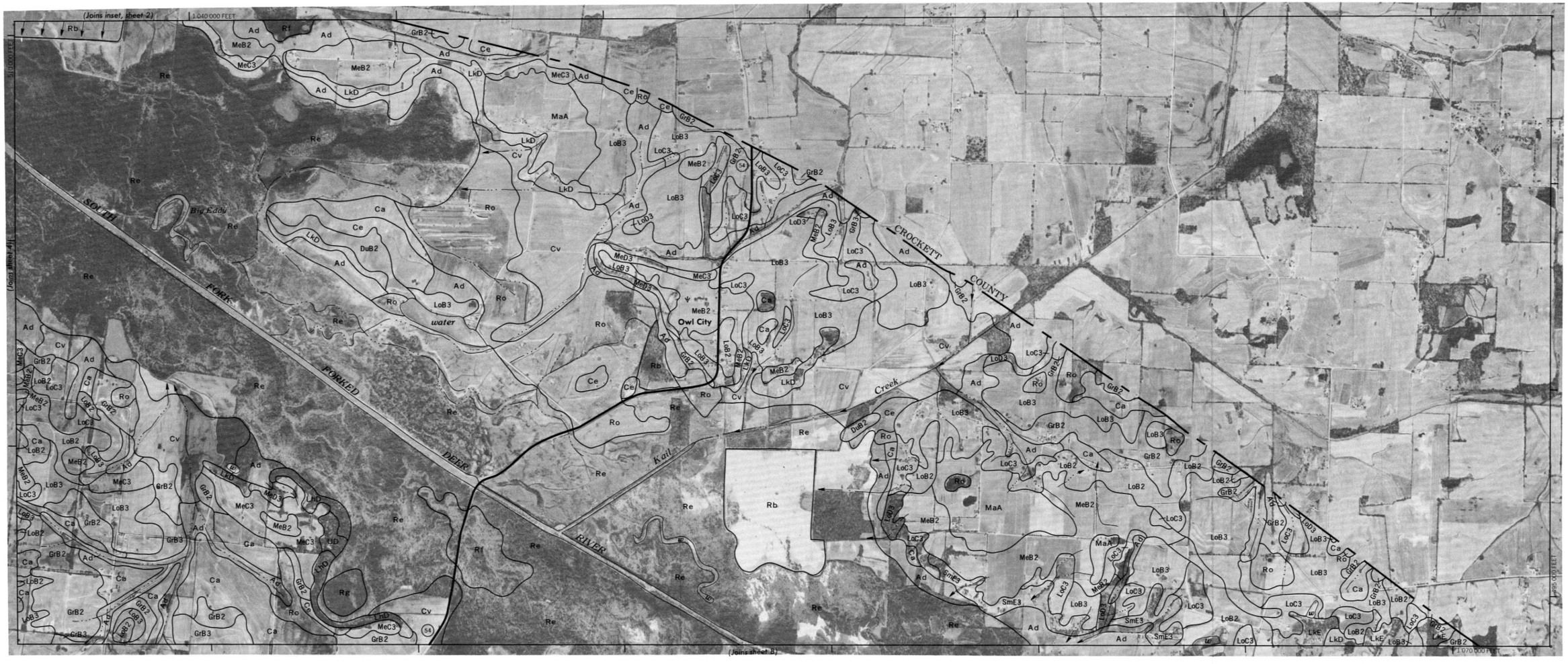
Scale - 1:24000

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

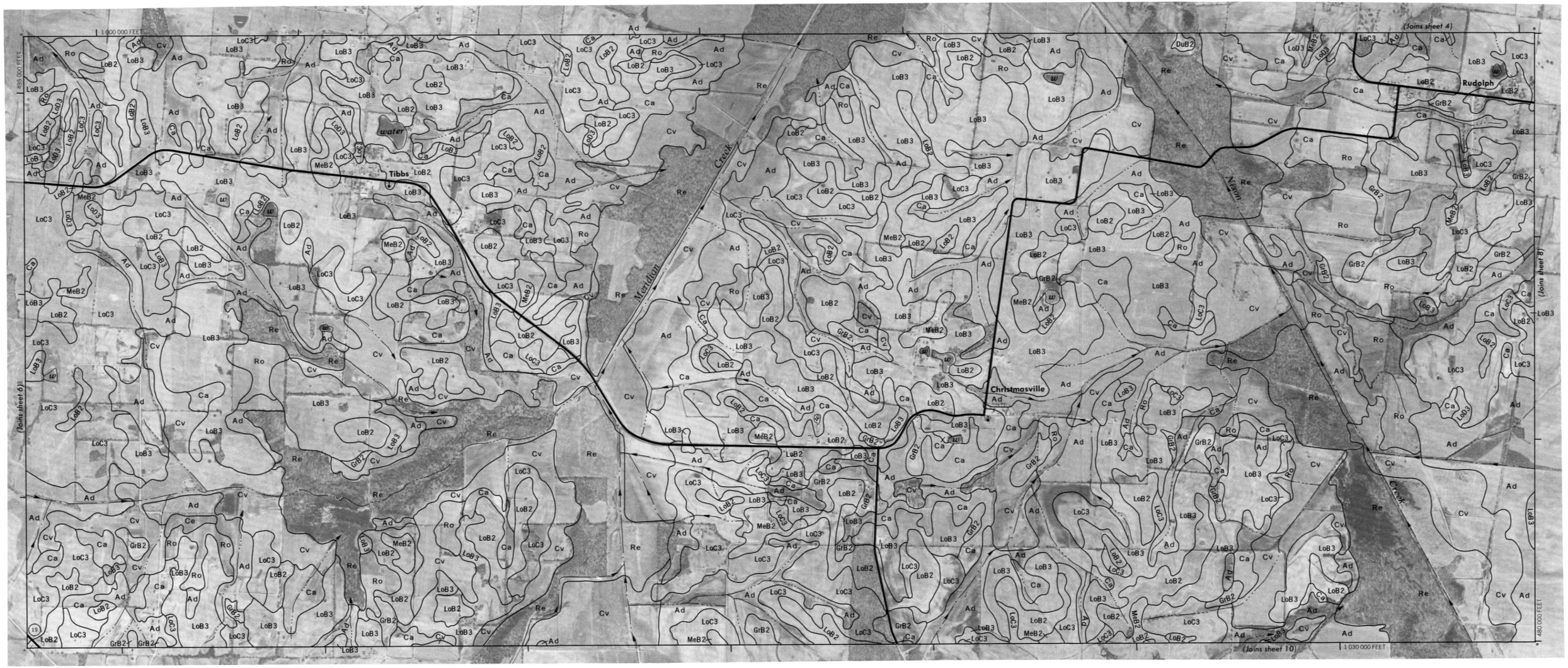
Scale - 1:24000

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

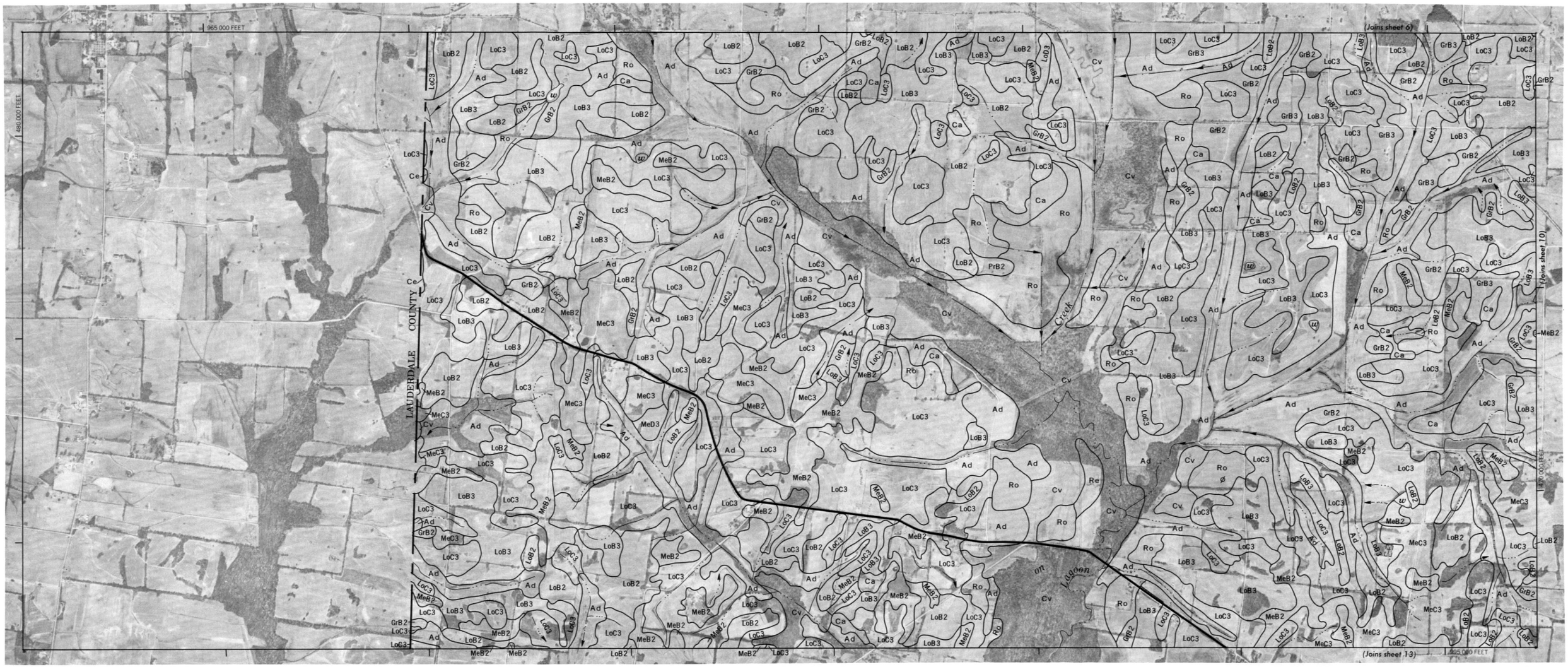
Scale - 1:24000

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 5 0 1 2 3 Kilometers

Scale - 1:24000

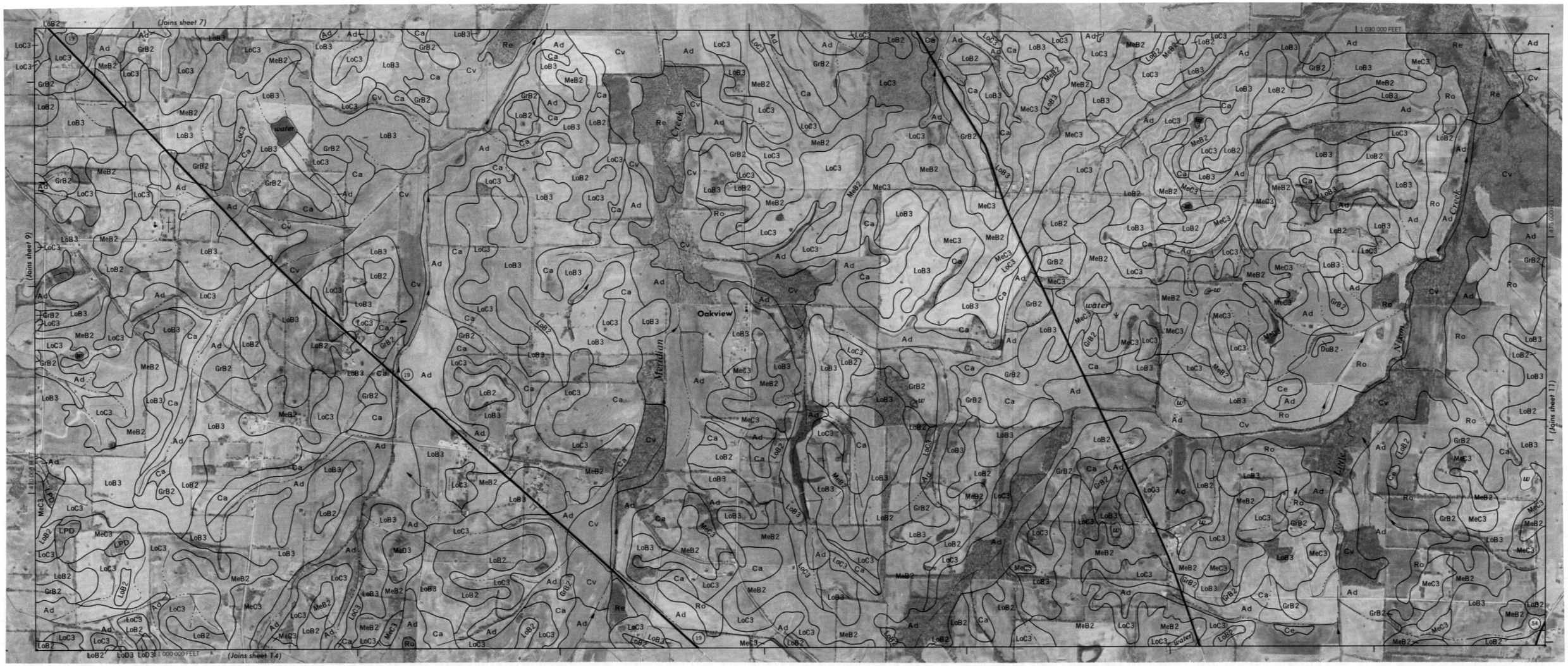
N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

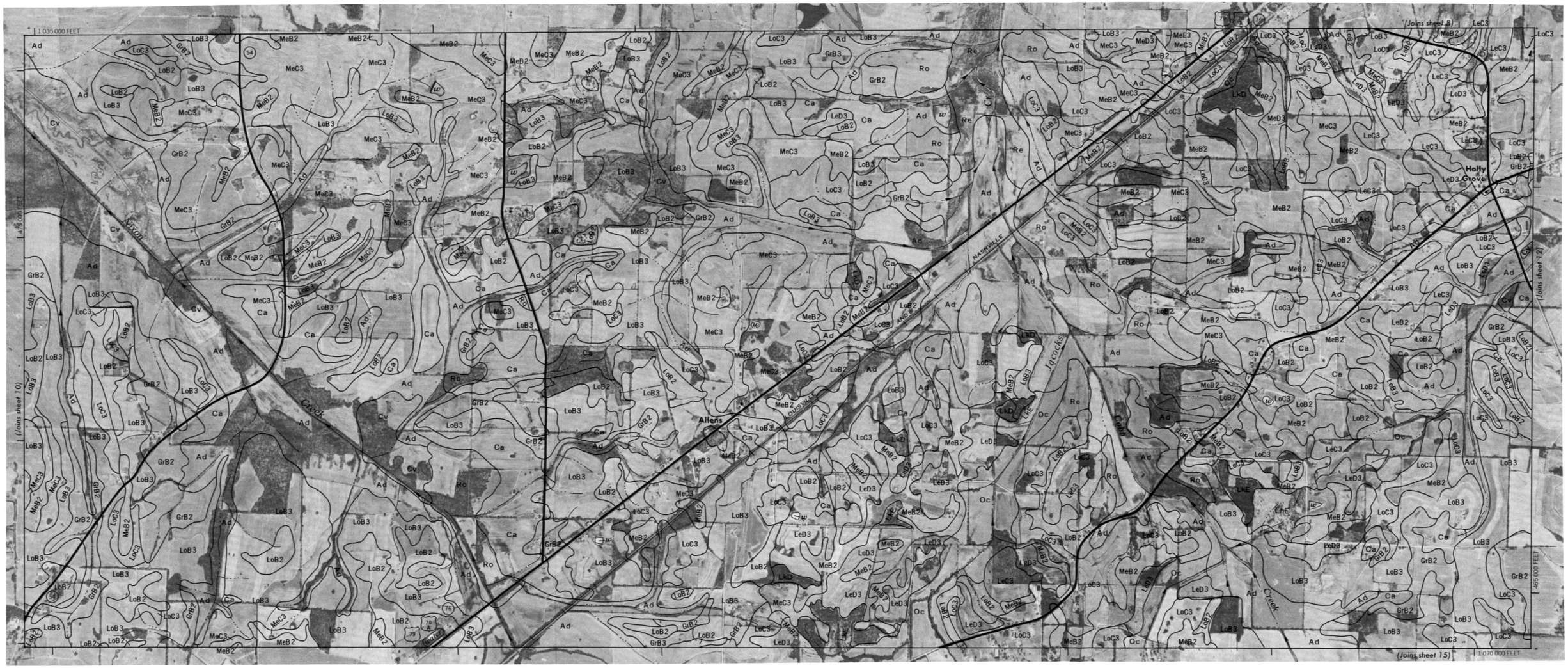
Scale - 1:24000



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

12

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 5 0 1 2 3 Kilometers

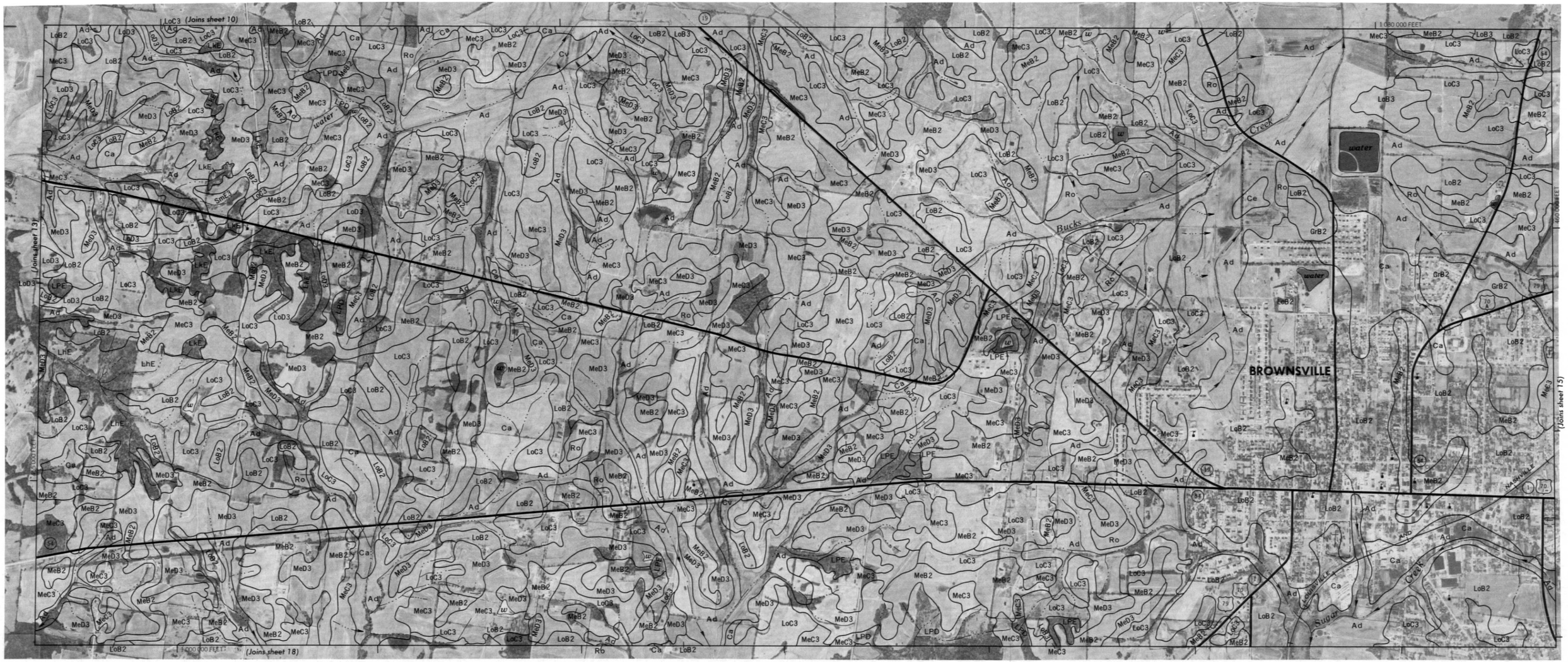
Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

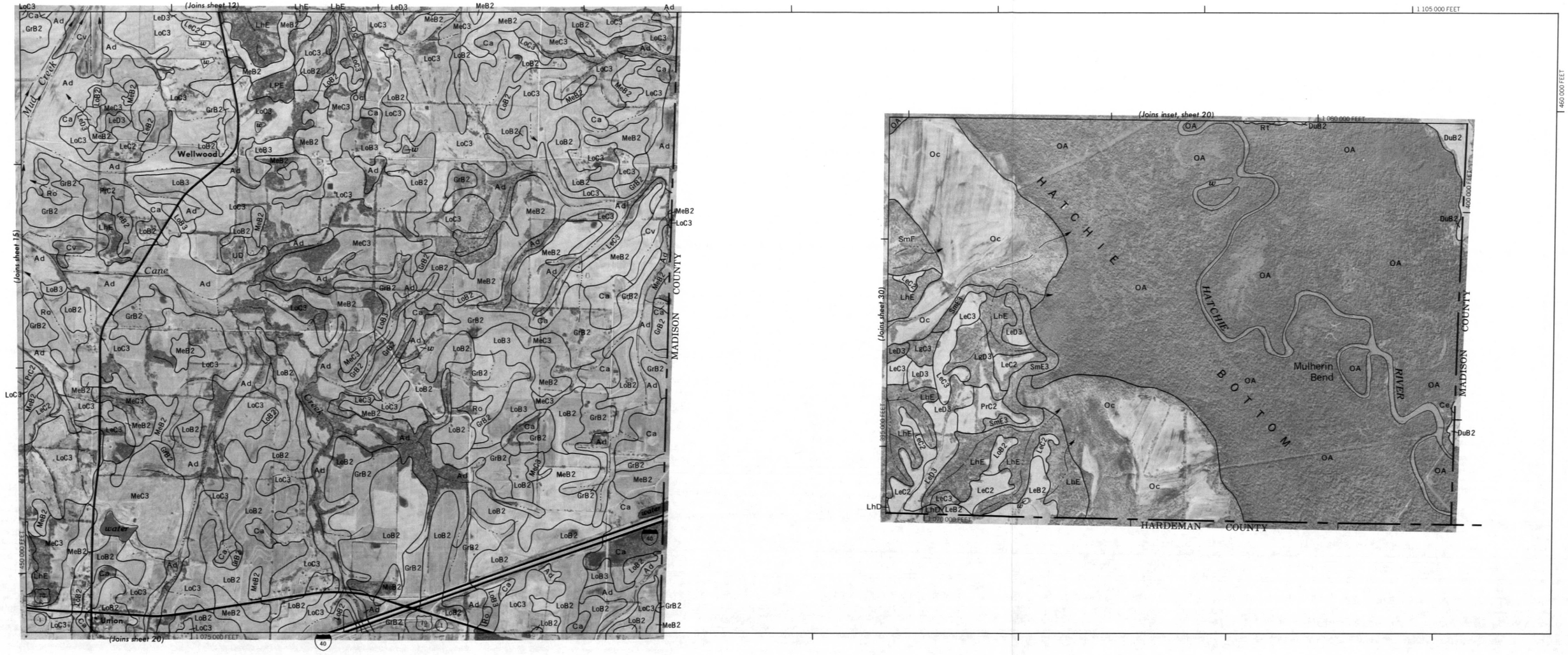
Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

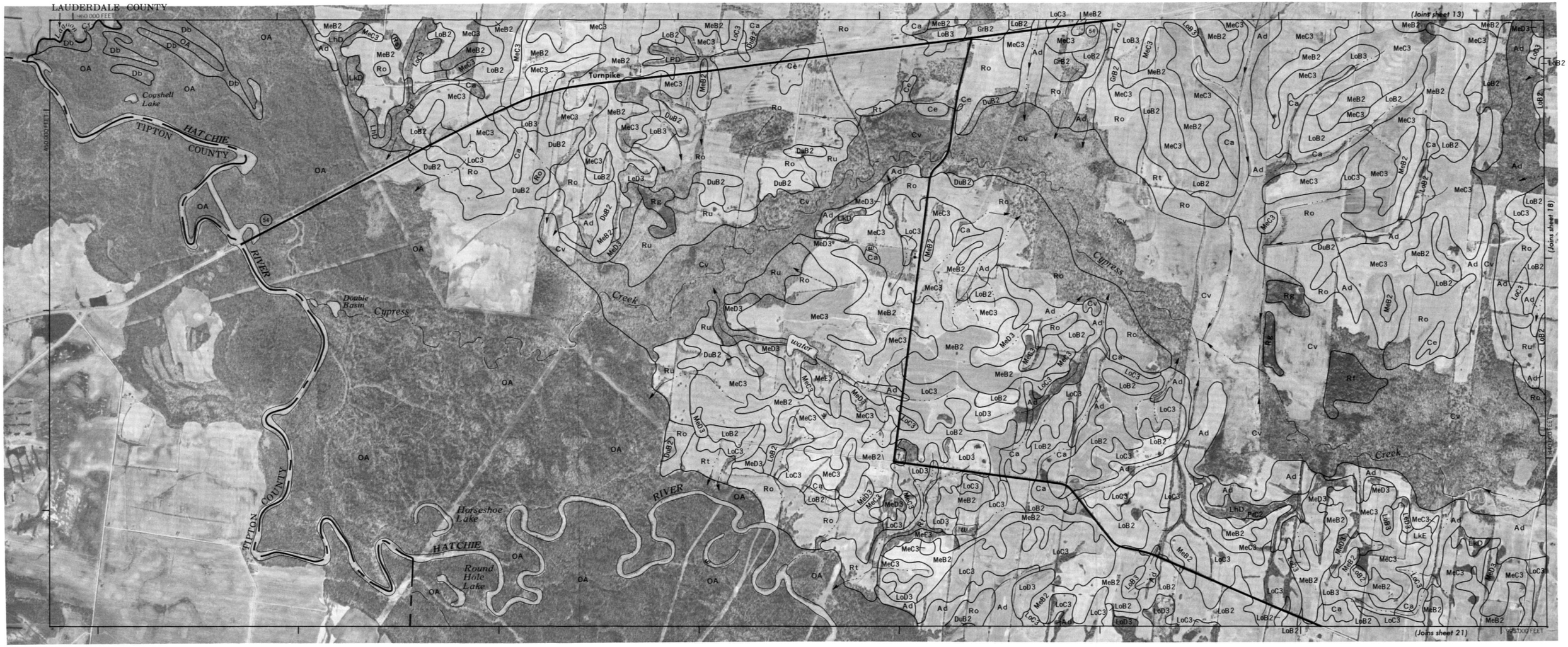


5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

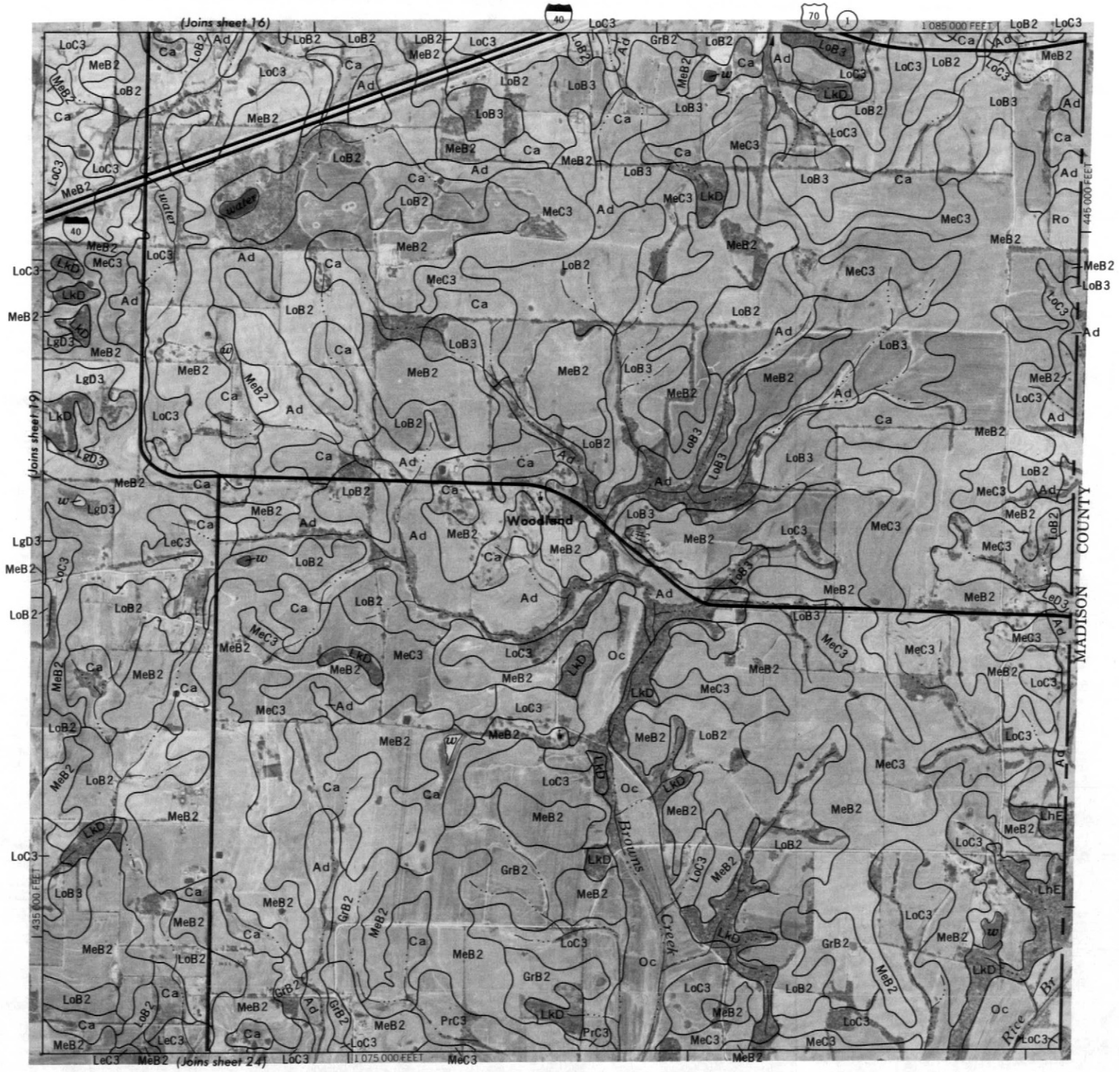
Scale - 1:24000

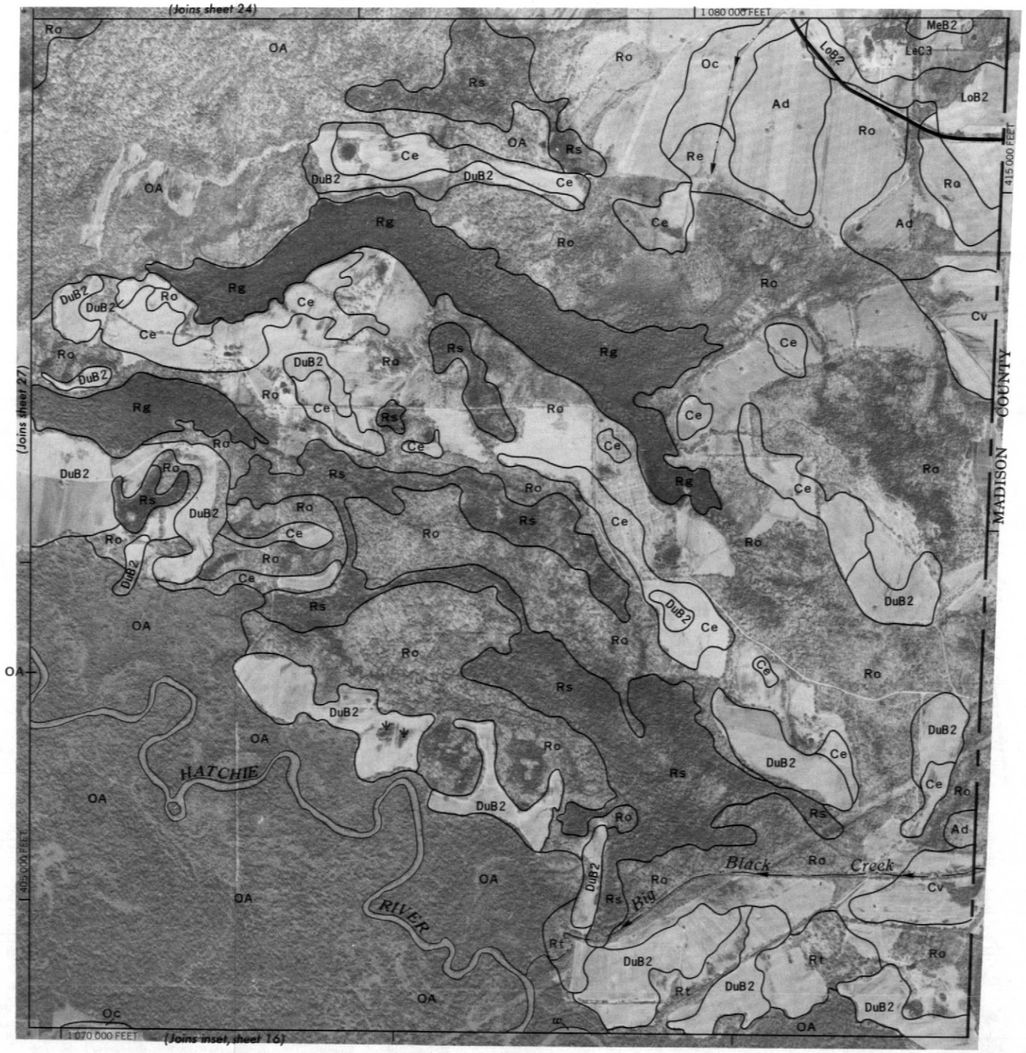
N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000





5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

21

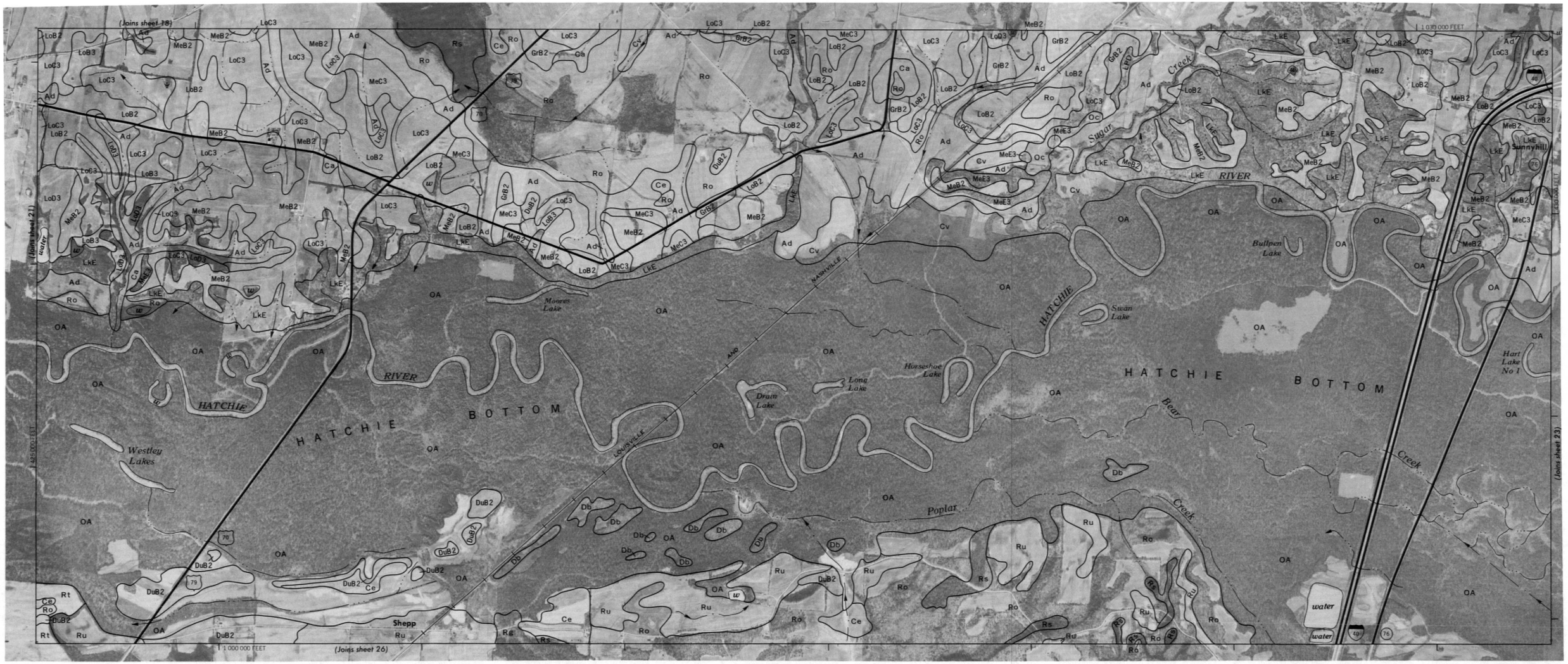
N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N

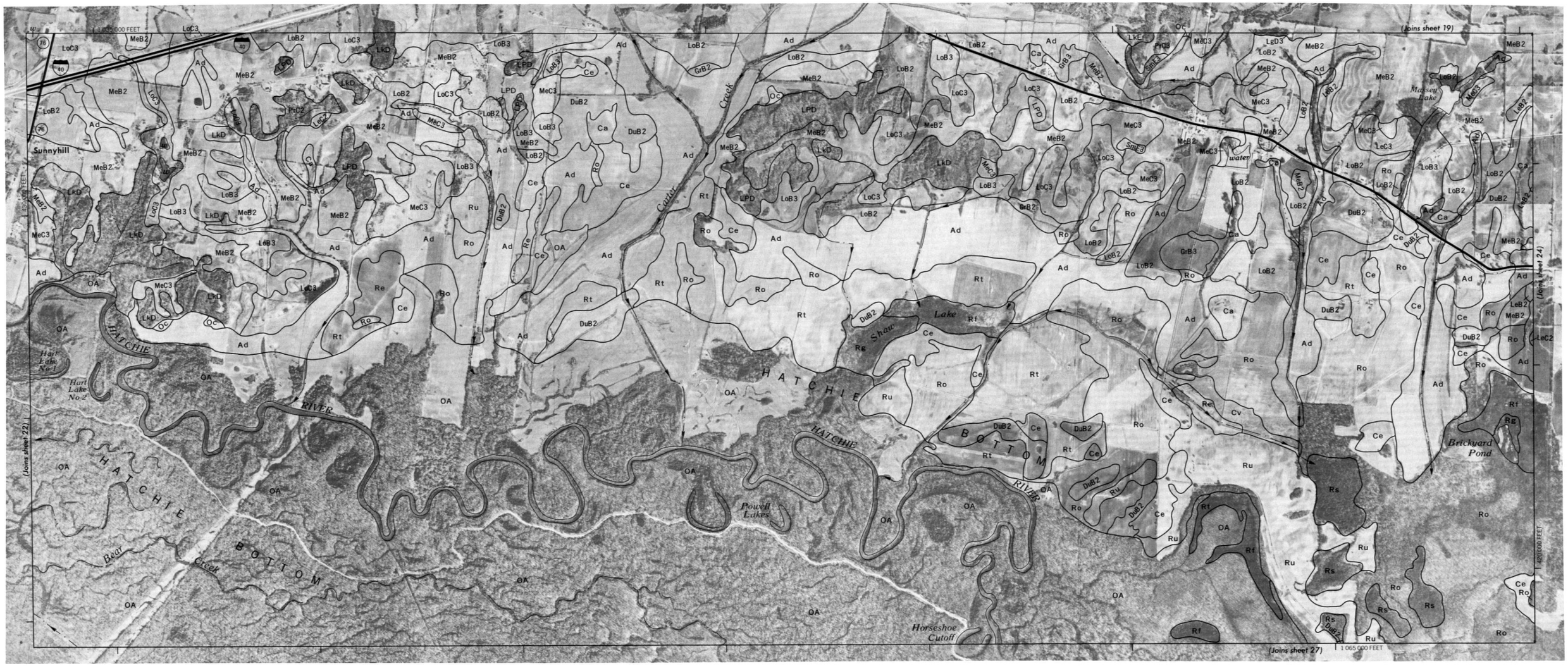


5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N



5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000


24
N
(Joins sheet 20)
(Joins sheet 29)
(Joins inset, sheet 20)
(Joins sheet 30)
(Joins sheet 31)
MADISON COUNTY
FAYETTE COUNTY
HARDEMAN COUNTY
Broums Creek
Rice Branch
Jeffers Creek
Poplar Creek
3000 AND 5000-FOOT GRID TICKS
5000 4000 3000 2000 1000 0 5000 10000 Feet
1 .5 0 1 2 3 Kilometers
Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

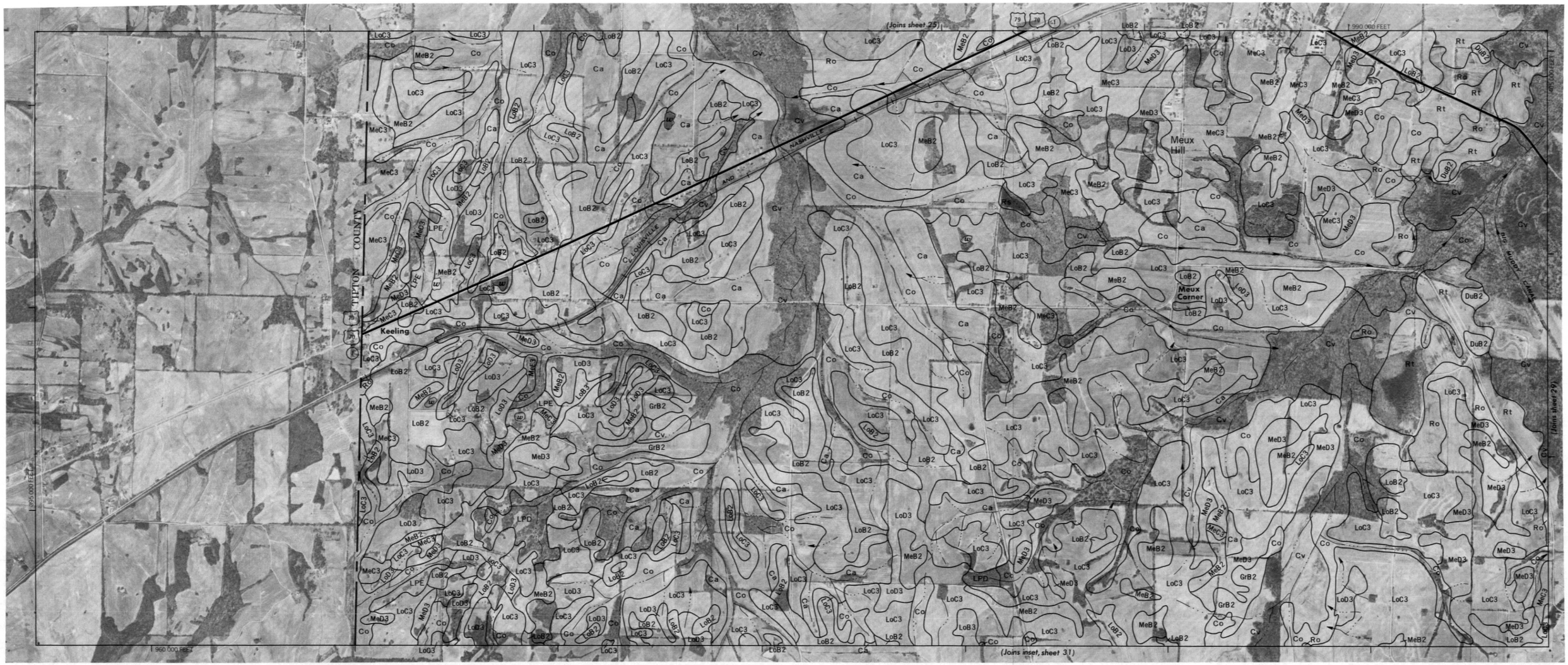
Scale - 1:24000

N

5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

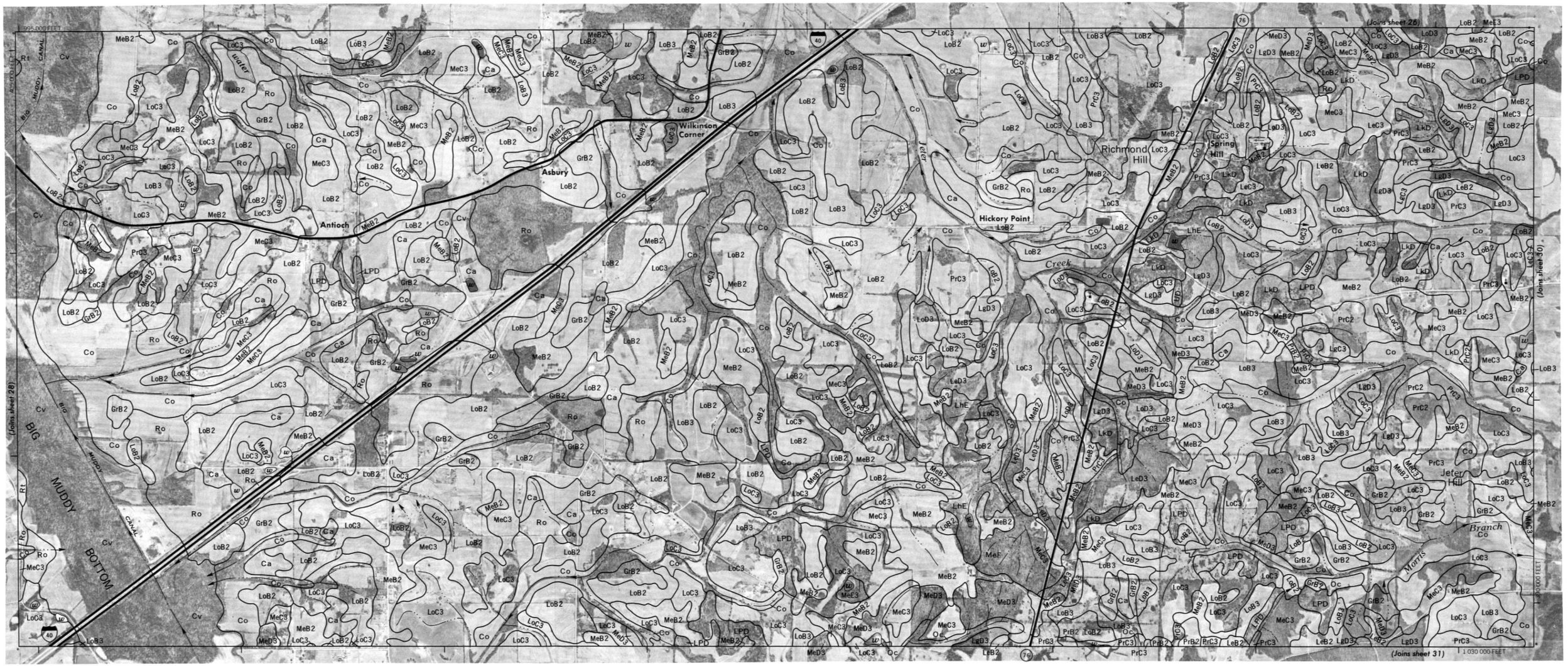


5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N

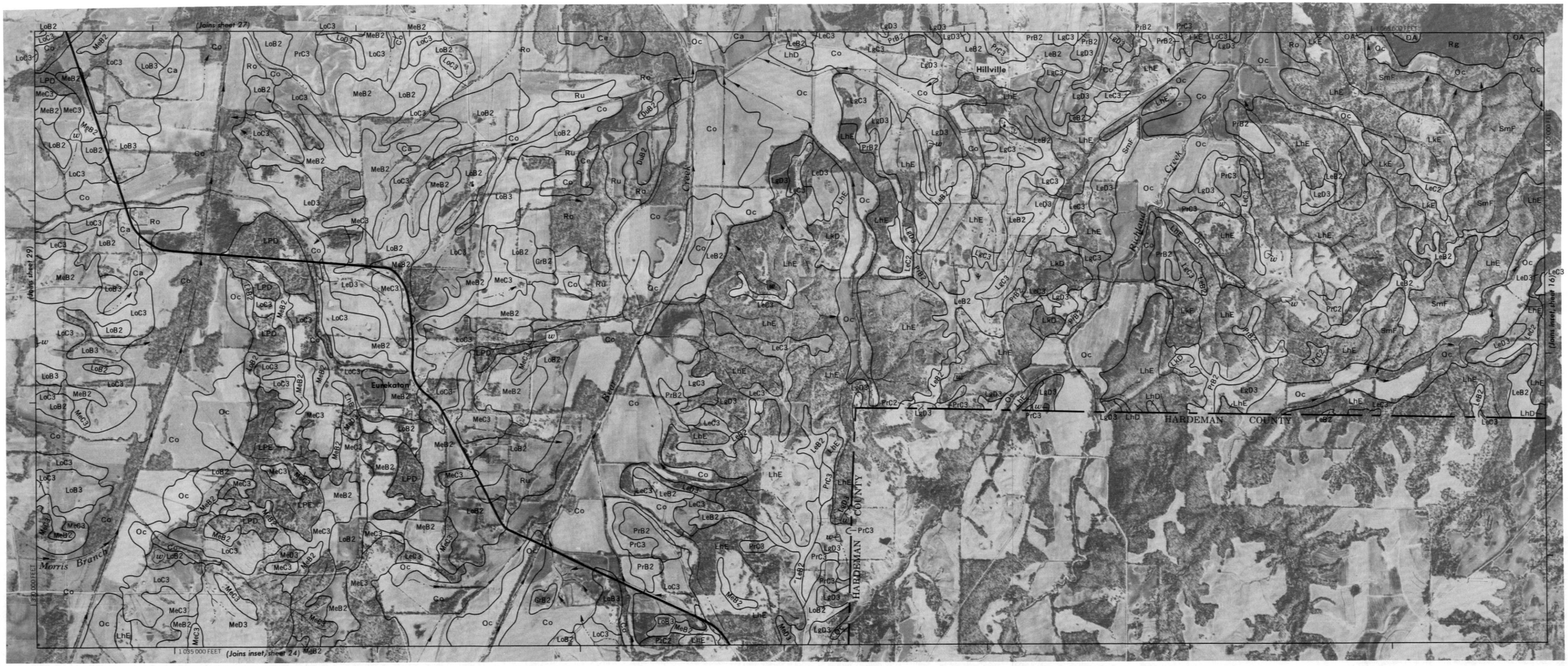


5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N

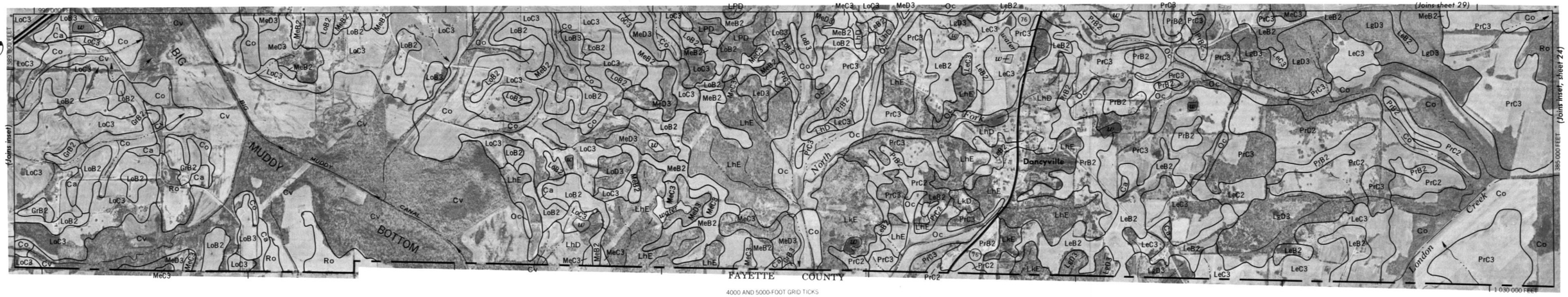


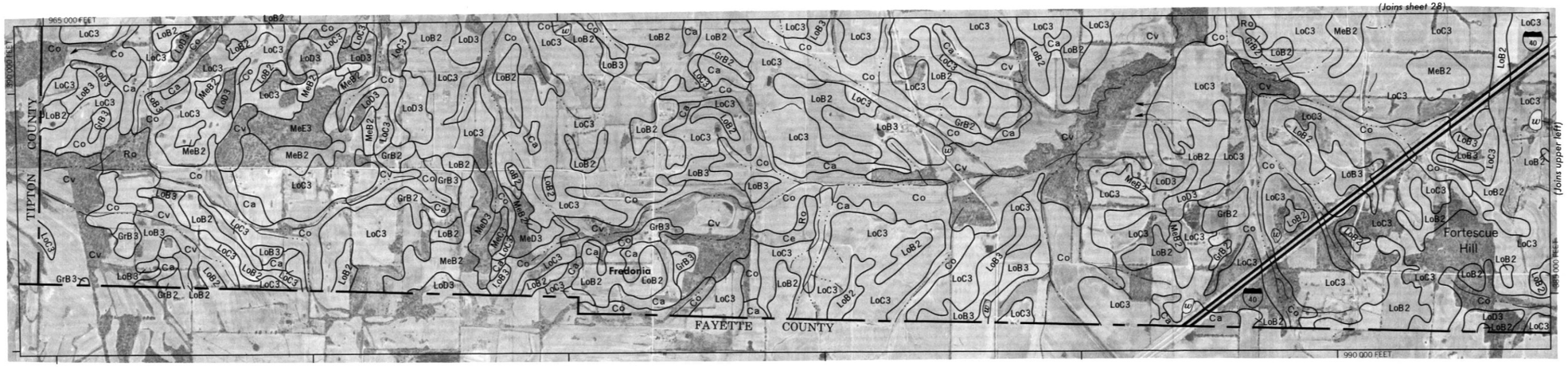
5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000

N





5000 4000 3000 2000 1000 0 5000 10000 Feet

1 .5 0 1 2 3 Kilometers

Scale - 1:24000